

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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No. 2410.—VOL. LI.

LONDON, SATURDAY, OCTOBER 29, 1881.

[WITH SUPPLEMENT.] PRICE SIXPENCE PER ANNUM, BY POST £1 4s

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.
Business negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.
BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUSELE.

SPECIAL DEALINGS in the following, or part:—
45 Almada, 6s. 9d. 150 Herodfoot, 10s. 3d. 40 Parys Copper, 14s. 6d.
25 Bwlch United, 31s. 3d. 30 Hingston Down, £1 8s. 7d. 75 Pestarena, 9s.
30 Carnarvon Cop., 18s. 9d. 5 Indian Queens Consols, 7s. 6d. 20 Ruby, £4.
125 Callao-Bis, 15s. 9d. 100 Indian Kingstons, 11s. 6d. 10 Richmond, £15 6s. 3d.
10 Devon Cons., £23 1/4. 100 Javali, 6s. 20 Roman Grav., £12 1/2.
25 Devon Friendship, 17s. 6d. 50 Killfret, £1 17s. 6d. 30 So. Devon, £1 13s. 9d.
50 East Caradon, 12s. 6d. 50 Kapanga, 3s. 3d. 30 S. Indian Gold, £1 19s.
call paid. 75 Last Chance, 17s. 10 S. Condurow, £10 12s. 6d.
30 East Chiverton, £2. 25 Leadhills, £2. 50 So. Darren, £1 10s.
10 East Devon, 10s. 30 Marke Valley, £1 6s. 3d. 25 So. E. Wynad, £1 1/4.
25 E. Ro. nan Grav., 16s. 3d. 100 Morfa Du, 14s. 25 S. Penstruthal, 7s.
25 East Van, 16s. 3d. 100 Nouv. Monde, 12s. 6d. 50 S. Penstruthal, 15s. 6d.
75 Frontino, £3 10s. 50 No. Penstruthal, 15s. 6d. 40 United Van Consols
30 Glenroev, £1 8s. 9d. 50 New W. Caradon, 10s. 15 Walkham Uni., fully
25 Glenroev, 9s. 6d. 20 Pandora, 14s. paid, 15s.
60 Gold Coast, 30s. 50 Polrose, 15s. 25 West Phoenix, £1 10s.
10 Grogwinion, £2 1/4. 75 Port Phillip, 5s. 6d. 50 Wheat Crebor, £3 1/4.
20 Gt. Southern Mysore, 50 Potosi, 13s. 6d. 10 West Kitty, £2.
5s. 9d., fully paid. 50 P. of Wales, 13s. 6d.

* * SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

* * SPECIAL BUSINESS at CLOSE PRICES in all Market TIN, COPPER, and LEAD SHARES, and business negotiated in shares not having a general market value.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

INDIAN GOLD MINES.—SPECIAL BUSINESS in:—

Devala Moyar. Indian Kingstons. Rhodes Reef.
Devala Central. Indian Phoenix. South-East Wynad.
Great Southern Mysore. Indian Trevelyan. South Indian Gold.
Indian Glenroev. Mysore. Wynad Perseverance.
Ooregum.

At CLOSE MARKET PRICES, free of commission.
* * Reliable information given on any of the above. A daily price list issued giving closing quotations. SPECIAL BUSINESS in Frontino and Bolivia Potosi, Rubi, Nouveau Monde, and Richmond.

* * SHARES in the ABOVE INDIAN or OTHER GOLD and SILVER MINES SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

RAILWAYS — FOREIGN BONDS — SPECIAL BUSINESS.
Fortnightly Accounts opened on receipt of the usual cover.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

AMERICAN AND CANADIAN STOCKS AND SHARES.—
SPECIAL BUSINESS.
Fortnightly Accounts opened on receipt of the usual cover.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
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44, THREADNEEDLE STREET, LONDON, E.C.
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BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.
RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS.
TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.
Accounts opened for the Fortnightly Settlement
A List of Investments free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
50 Almada, 6s. 9d. 40 E. Roman Gravels. 20 Penhalls.
100 Ankook. 30 East Van, 19s. 6d. 25 Plumas Eureka, £2 14s.
20 Arendal, £23s. 100 Eberhard, 15s. 6d. 150 Port Phillip, 5s. 6d.
50 Bratsberg, 32s. 25 Frontino, £3 10s. 6d. 100 Pen-yr-Osedd, 21s.
25 Bedford United, 34s. 100 Goodevere, 23s. 60 Prince of Wales.
50 Consolidated, 5s. 20 Great Holway, £5 1/2. 75 Potosi, 13s. 6d.
100 Callao Bis, 15s. 6d. 50 Glenroev, 10s. 20 Richmond, £15 7s. 6d.
2 Carn Brea. 75 Gold Coast, 30s. 15 Ruby, £4.
70 Carnarvon, 17s. 6d. 40 Herodfoot. 25 South Penstruthal.
40 Copiapo, £2 15s. 3d. 25 Hingston Down, 26s. 10 Sierra Buttes, 3s.
30 Colorado, £2 10s. 100 Indian Kingstons. 10 S. Condurow, £10 12s. 6d.
50 Derwent, 27s. 150 I.L.L., 3s. 9d. 50 Tankerville, 10s. 6d.
3 Dolcath. 90 La Plata, 28s. 10 Wh. Grenville, £12.
100 Dev. Friendship, 20s. 25 Last Chance. 50 W. Goldolphin, £2.
15 Devon Consols, £2. 25 Marke Valley, 29s. 10 Wheel Basset, 45 15s.
60 Don Pedro, 9s. 6d. 100 North Herodfoot. 50 West Polbrean.
50 Devala-Moyar, 23s. offer wanted. 50 West Polbrean.
100 Exchequer, 3s. 9d. 30 New Trumpet. 15 West Kitty.
20 East Caradon, 12s. 6d. 150 Nouv. Monde, 13s. 6d.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.
Mr. Bumpus devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

The position of the TIN market is steadily improving, and, in all probability, there will be a further considerable advance in the price of this metal before the end of the year.

Shares in SOUND TIN MINES should, therefore, be bought at present prices, as many of them are likely to have an early and substantial rise. Those who have followed my advice during the past few months can now realise good profits, and there is still every prospect that higher prices will be reached before long.

I particularly recommend the purchase of shares in:—
WHEAL GRENVILLE. WEST GODOLPHIN.
WEST KITTY. WHEAL AGAR.

for an important rise in value and dividends.

WILLIAM HENRY BUMPUS, SWORN BROKER.

OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.

ESTABLISHED 1867.

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ESTABLISHED 20 YEARS.

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SHARES BOUGHT OR SOLD ON COMMISSION.

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MINERALS, AND METAL MARKETS—SHARE LIST,
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ESTABLISHED 1853.

Mr. A. E. COOKE can SELL the following SHARES:—
20 Bedford United. 30 Herodfoot. 70 Prince of Wales.
30 Bodidris. 25 Mona Consols. 20 Tankerville.
50 Cannarvon. 30 No. D'Eresby Mount. 10 West Kitty.
50 Devon Friendship. 100 New West Caradon. 40 Wheal Jane.
50 East Blue Hills. 30 North Herodfoot. 50 Callao-Bis.
10 East Chiverton. 30 Old Shepherds. 75 Potosi.
15 East Craven Moor. 100 Parys. 100 Nouveau Monde.
40 Great Holway. 50 Polrose. 50 Eberhardt.
65 Great Polgoth Uni. 25 Pioneer.

N.B.—Lowest market prices will be accepted for any of the above, or offers may be made by telegram or letter.

INVESTOR'S GAZETTE. New number next Friday.

SPECIAL ADVICE.
Buyers of mine shares should not be misled by advertised quotations, but send orders to buy at market price. Many shares offered are never supplied.

ALFRED E. COOKE, 76, OLD BROAD STREET, LONDON.

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Mr. REYNOLDS recommends the purchase of shares in the following shares, viz:—

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He has, however, no orders on hand to sell any shares in the above, and must refer immediate buyers either to the London or Cornish markets. Mr. Reynolds's object in giving this intimation is for the purpose of securing an advantageous advertisement for a future time. Mr. Reynolds has persistently and publicly in every way recommended West Kittys since they were at 20s. per share. ANY ORDERS TO BUY which may be sent to Mr. Reynolds will have to stand over until SELLERS favour him with instructions.

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AMERICAN AND BRITISH RAILS, FOREIGN BONDS, and all STOCKS and SHARES.

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Full particulars on application.

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Can SELL the following SHARES at prices annexed:—

100 Almada, 6s. 9d. 100 Kapanga, 15s. 150 Port Phillip, 5s. 3d.
40 Bedford Uni., £1 1/4. 40 Kir Hill, 17s. 25 Parys Corpora., 14s. 6d.
25 Birdseye Creek, £1 1/2. 50 La Plata, 18s. 9d. 50 Rhodess Reef, 15s.
100 Brazilian Gold, 18s. 9d. 150 Lady Ashburton, £5 1/2. 50 Quartz Hill, 17s. 6d.
50 Bwlch United, £1 1/2. 10 Minera, £23 1/2. (fully paid.)
100 Colar, 10s. 100 Nouveau Monde, 13s. 9d. 25 Ruby, £4 2s. 6d.
30 Colorado, £2 11s. 3d. 50 N. Trumpet Con. 100 Sortridge, 18s. 6d.
100 Callao Bis, 15s. 3d. 60 New West Caradon, 10s. 6d.
150 Chontales, 3s. 3d. 50 Dev. Friendship, 20s. 40 New Kitty, £2 1s. 3d.
50 Dev. Friendship, 20s. 50 Mysore Gold, 28s. 9d. 40 Tambracherry, £1 1 1/2
75 Don Pedro Gold, 9s. 40 Emma, £2 12s. 6d. 40 United Van and Glyn
40 Emma, £2 12s. 6d. 50 Gold Coast, 5s. pm. 60 Potosi, 13s. 9d. 50 Wheal Jewell, 10s. 6d.
50 Herodfoot, 8s. 75 Prince of Wales, 14s. 50 West Crebor, 10s.
80 Hoover Hill, 13s. 6d. 100 Parka Consols, offer wanted. 50 West Lisburne, 9s. 9d.
40 Indian Glen., £1 8s. 9d. 75 Penberthy Crofts, 20s. 6d. 40 Wheal Jane, 25s.
40 Indian Phoenix, £1. Special dealing in Standard Bank of London (Limited), and Southwark and Deptford Tram.

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MINING AGENT, STOCK AND SHARE DEALER,
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MINING INVESTMENTS.—Third Edition, just published.
"What to Select, and What to Avoid," by ALFRED THOMAS, 10, Coleman-street, London, E.C. Will be forwarded on receipt of 12 stamps.

ESTABLISHED 1852.

HENRY GOULD SHARP, STOCK AND SHARE BROKER,
21, THREADNEEDLE STREET, LONDON, E.C.
BANKERS—London and County Bank, Lombard-street, London, E.C.

NOTICE TO SHAREHOLDERS.

WHEAL JANE (TIN) MINE
KEA, CO. NWALL.

In 12,288 Shares. £1 10s. 8d. paid. Price, £1 5s. to £1 7s. 6d. per share.

WANTED TO PURCHASE 1000 OR 2000 SHARES, AT 25s. PER SHARE FOR CASH.

NOTE.—Compared with all the tin mines in Cornwall, Wheal Jane shares are intrinsically and honestly worth £2 per share. The mine is now making profits

12,288 SHARES at £1 5s. IS ONLY £15,350 FOR THE WHOLE MINE.

They have "six" engines upon this mine—in fact, no mine is more efficiently equipped with machinery for laying open the ore ground in the various levels, &c. The buildings, machinery, engines, &c., cost £15,000, or more.

£16,896 WAS PAID IN DIVIDENDS ON AN OUTLAY OF £5,330.

Under new management the mine is being worked in a very vigorous and miner-like way. They have 150 persons employed at surface and underground.

NOTE.—Some 2000 shares have been bought up for Cornwall, by those who know the merits of the mine.

NOVEMBER SALE OF TIN (four weeks) EXPECTED TO REALISE £750 OR MORE, LEAVING A GOOD PROFIT.

A MAP OF THE MINE WILL BE FORWARDED TO INVESTORS.

TO INVESTORS AND SHAREHOLDERS.

WHEAL JEWELL (COPPER) MINE.
MARAZION, CORNWALL.

In 12,000 Shares. £0 16s. 6d. paid. Price £0 10s. 6d. to £0 12s. 6d. per share.

THE CHEAPEST COPPER SHARES IN CORNWALL—SAFE TO BUY.

Safe to rise 100 to 300 per cent. Will no doubt pay dividends in 1882 or 1883.

NOTE.—They sold 103 tons of copper ore in June for "four" months. In August they sold 145 tons, and have now 120 tons, making 268 tons for the present "four" months working. These sales will shortly increase to 100 tons per month, and by the time the lode is cut in the 70 fathom level they will lay open a large extent of copper ore ground 20 fathoms in depth.

NOTE.—Several thousand shares are held by Cornishmen.

They have 58 men working underground and at surface. This is not like an old worked out deep mine in 100,000 shares of £1 each. There are only 12,000 shares, and the mine 70 fathoms deep, opening up rich for copper in a district, surrounding and adjoining mines which have paid immense dividends.

12,000 SHARES AT 10s. EACH IS ONLY £6000 FOR THE MINE.

Compare it with Cornish companies in 40,000 to 100,000 shares of £1 each.

HENRY GOULD SHARP, STOCK AND SHARE BROKER,
21, THREADNEEDLE STREET, LONDON, E.C.

GRANVILLE SHARP, STOCK AND SHARE DEALER,
32, QUEEN VICTORIA STREET, LONDON, E.C.

Recommends the purchase of shares in SOUND TIN MINES.

In consequence of the generally improved and improving condition of Trade and Commerce, assisted by the continued reduction of the stocks of Tin, the market for that metal has been, and is still, steadily improving, with good prospects of a further 40 to 50 per cent. advance.

SHARES in all SOUND TIN MINES are certain to advance proportionately.

GRANVILLE SHARP specially recommends the purchase of shares in the EAST CHIVERTON SILVER-LEAD MINE, it being on the eve of proving a very valuable property, as evidenced by the recent important discovery in the 90 fm. level driving west, where a course of rich silver-lead ore already proved for nearly 30 fms., and has opened up in a few weeks reserves valued at £5000 to £8000 between that (90 fm.) level and the level over. A 50-ton parcel of the ore sold recently for £13 per ton. EAST CHIVERTON MINE is on the same lode which in the mine immediately west produced between the years 1863 and 1872 silver-lead ore that realised very nearly HALF A MILLION STERLING, and between 1875 and 1880 LEAD and BLENDE ORES amounting to £110,000. These facts can be verified by the books in Mr. Granville Sharp's possession, at 32, Queen Victoria-street, E.C.

Bankers: London and Westminster, E.C.

MESSRS. H. MANSELL AND CO., STOCK AND SHARE
DEALERS, 19, BISHOPSGATE STREET WITHIN, LONDON, E.C.

Twenty-seven Years Experience.

The following Shares are FOR SALE at prices affixed, unless price advances or shares are withdrawn:—

50 E. Craven Moor, offer wanted.

130 Herodfoot, 6s. 9d. 200 W. Craven Moor, offer

100 Wheal Jane, 15s. 125 Wheal Jewell, 10s. 10 Van, £3 1/2.

25 Bodidris, 20s. 50 Eberhardt, 10s. 10 Van, £3 1/2.

* HERODFOOT.—A lower offer may be accepted for these, as holder is unable to meet further expected calls.

FOR SPECIAL SALE AT NET PRICES.—300 Great Southern Mysore, in One Lot (£1 paid), 8s. 7d. 200 Herodfoot, 6s. 9d.

FOR SPECIAL SALE. OFFERS CAN BE MADE:—

35 Callington Consols. 10 Hornachos, £3 paid. 20 Southwark and Dept-

20 Firmia and Son. 40 North London Subur- 10 Tramways Trust.

100 Gold Mining Associa- 10 North London Subur- 50 Yorkshire Discount.

tion of Canada. 50 Sentein. 30 Silver Peak.

BUYER of Grenville, Tamar, South Crebor, and Carn Camborne. Sellers please state lowest price.

MR. ALEXANDER DAVIDSON
STOCK AND SHARE DEALER,

139, LEADENHALL STREET, LONDON, E.C.

The following SHARES are FOR SALE at prices affixed, unless price advances or shares are withdrawn:—

100 Bratsberg, £1 17s. 50 Gt. Polgoth United, 110 So. Devon Uni., 35s.

115 Devon Friendship, £1 paid, 15s. 100 Sortridge Con. (£1

20s. 100 Goodevere, 19s. 6d. paid, 17s.

70 Devon Great United 60 Hoover Hill, £1 paid, 90 South Wheal Crebor,

(£1 5s. paid), £1 1s. 15s. offer wanted.

100 Frongoch (offer). 110 Pen-yr-Osedd, 17s. 6d. 30 Van, £3 1/2.

TO SHAREHOLDERS.—FOR SPECIAL SALE AT NET PRICES:—

100 TAMAR SILVER-LEAD, £1 1s.

50 BODIDRIS, (very cheap at the price), 5s. 3d.

TO SHAREHOLDERS. FOR SPECIAL SALE. OFFERS CAN BE MADE.

400 E. Wh. Rose, £1 pd. 135 Indian Queens. 50 Sentein.

100 E. Wheal Rose, 12s. 6d. 50 Lady Ashburton. 100 Southwark and Dept-

paid. 240 Mounts Bay. ford Trans.

100 Gold Mining Associa- 20 North London Subur- 25 Silver Peak.

tion of Canada. 100 North London Subur-

THE HARLESTON AGRICULTURAL COMPANY (Limited).—Capital 10,000*l.*, in shares of 25*l.* To hire or otherwise acquire farms, buildings, premises, &c. The subscribers are—G. W. Beaumont, Weynad, 80; G. Chase, Weynad, 40; G. Durant, Norfolk, 40; E. Beau-

mont, Norwich, 12; W. Edwards, Harleston 20; J. M. Barnes, Morningthorpe, 40; M. Hassard, Harleston, 40.

REPORT FROM CORNWALL.

Oct. 27.—There is a natural amount of impatience felt at the anything but inevitable delay which is taking place in the full realisation of the improvement fully and fairly warranted by the condition of the tin statistics. Though it is always good, and especially good in matters connected with mining, to "hasten slowly," there is no adequate reason for such very slow progress as this, and it is high time pleasant prospects were changed into full and pleasant certainty. Every week, however, that passes now makes the permanent character of the improvement effected still more secure, and with that in view, and the prices at present actually realised, we must perforce be content until it pleases the masters of the situation to move.

There seems a very fair prospect that 1881 will leave a permanent mark upon the condition of mining enterprise in the West in the resuscitation and permanent improvement of not a few mines. If we except the ephemeral creations of the past few months—not a few of which were like the proverbial razors, made to sell—we shall have as the result of the year's enterprise a substantial addition to the area of legitimate mining, which will be the most satisfactory token and proof we could have of the thoroughly solid character of the revival that has taken place. Next year the improvement, by all appearance, will make itself still more marked, and we believe that there is every reason to anticipate that, as compared with 1880, the dividend mines of Cornwall and Devon will be at least doubled in 1882, and probably something more.

We did not allude last week to the presentation to Sir P. P. Smith, of Truro, of his portrait, which is to hang in future in the Town Hall of that city. Sir P. P. Smith, not only in his professional capacity but as private gentleman, and in various ways, has had much to do with the mining interests of the county, and there is no one in Cornwall who is held in higher and better deserved esteem. A more honourable and courteous gentleman there is not in the West, and never was token of public respect more thoroughly deserved.

Mr. Benedict Kitto, F.G.S., to whom in connection with the Miners' Association not only Cornwall but mining in Devon owes so much, has taken his final and formal leave of the West, the special occasion being the distribution by Mr. W. C. Pendarves of the prizes at the Camborne Science Classes. He has not been allowed to leave without a substantial recognition of his services in the shape of a cheque, which was presented to him by the hands of Mr. Pendarves at the end of the distribution. In recognising this, Mr. Kitto said that he left his work in the hands of his successor—Mr. Berringer—with the greatest possible confidence.

TRADE OF THE TYNE AND WEAR.

Oct. 27.—The coal, coke, and other trades have been considerably disorganised by the extremely heavy weather in the North Sea. In the middle of last week there was a large arrival of steamers and sailing vessels, and a great number were loaded in the docks and at the various shipping places in those rivers, and a fair trade was done so far as the loading of vessels was concerned, but the continued heavy weather prevented the sailing of any vessels for many days. On Oct. 14 this coast was visited by a hurricane of great, we believe of unprecedented, violence. The gale came on with great rapidity, but it was preceded by a rapid fall of the barometer, the fall amounting to considerably more than an inch of mercury in 18 hours, and this fall ought to have warned the numerous fishermen who sailed on that morning of their danger, many of whom have returned, and some of whom were warned by the harbour masters on the north-east coast, but they only laughed at the warnings, and trusted to their judgment of the weather signs, and a large number of those brave men lost their lives. It is to be hoped in future the fishermen on the coast will pay more attention to the indications of the barometer. It is matter for congratulation that during these great storms and rapid fluctuations of the barometer we have so far had no mining disasters, although the danger of accidents is certainly considerably increased by unsettled weather. It is also matter for congratulation that although the sailing of vessels from the Tyne has been prevented for some time by heavy weather, both sailing vessels and steamers, although few in number, have continued to arrive, and with few exceptions they have been able to enter the harbour in safety. The extension of the Tyne piers and the increased depth of water and general improvements effected have made this possible. On the day named (Oct. 14) the lowest point the barometer reached was 28.40 at the sea level. This occurred at 12.30 on that day, and after one o'clock P.M. the mercury rose rapidly, but the crisis of the storm was only reached about two o'clock. At that time the speed of the wind no doubt reached 65 miles per hour. Heavy rain also fell, but the rain driven over a level surface had the appearance of steam or vapour. Great damage ensued both on land and at sea. Numbers of large trees were blown down, and in some cases whole plantations. Great damage was done to house property, and the strongest built houses in isolated situations were severely shaken.

As the docks and harbours here continue to be crowded with laden ships work will be much interfered with at the collieries this week. All the ships to hand have been engaged at advanced rates. Many foreign ships have been engaged for the lower Baltic ports. Small coasters are still wanted for house and gas coal. The stoppage through detention of steamers and sailing vessels being so great it is rather difficult at present to judge of the state of the coal and coke trades, but it is still satisfactory to note that household coal is improving in price, and the value of all other coal is fully maintained. It appears that the coal shipments from this country continue to increase. In September the total shipments were of coals and coke 2,325,505 tons, and in September, 1880, 2,149,318 tons, and 1,943,505 tons in September, 1879. France takes the largest quantity, Russia is second, Germany third, and Italy fourth. The total shipments foreign were for the first nine months of this year 18,366,928 tons; and for the same period in 1880, 17,643,262 tons; and in 1879, 15,532,598 tons. It is computed from these data that the probable shipments in 1880 when completed will reach 24½ million tons. To-day (Wednesday) the weather and sea have moderated, and a large number of vessels—upwards of 100—have proceeded; but there have been few arrivals, and the coal and other trades are much obstructed in consequence. The best house coal in Durham has been advanced 1s. per ton this week. The experiment made by the Marquis of Londonderry to supply house coals to consumers in London has so far proved very successful. The coals are sent direct to the wharf in the Thames from the collieries, and delivered to consumers in the City at 22s. per ton.

The Iron Trade continues good in all branches. There have been some fluctuations in prices during the past few days, mainly caused by the state of the Scotch markets, but there is a good demand for shipment, and also for home consumption, for all classes of finished and pig-iron; and, as stocks are steadily decreasing, the prospect for the trade is certainly good. As the make is reduced it is expected that a large reduction in stocks will appear at the end of the month, when the returns are made up. An advance in the rates of Cleveland pig-iron is announced from America, but ironmasters rely chiefly on the home and European trade. Scotland, since the present month opened, has been drawing very largely on Cleveland pig-iron, nearly one-half of the quantity shipped having been for Scotland. The greater part of the remainder has been sent to the Baltic. The demand for manufactured iron remains steady. Though there is less pressure consumers show more inclination to wait since a lull appeared in the pig-iron market. The starting of the plate mills, and consequent increase of make at Walker, on the Tyne, and at Hartlepool, tends to relieve the pressure for ship iron. The Wear rolling-mills are also turning out a great quantity of plates and other finished iron. A large order for railway wagons has been received in the district, and the minor industries generally are very well employed. There is a steady demand for angles and bars. The prices of iron are about—Bars, 6l.; angles, 6l. 2s. 6d.; plates, 6l. 10s.; boiler-plates, 7l. 10s. to 7l. 15s.; puddled bars, 4l. net. Pig-iron on Friday last,

No. 3, was 42s. per ton. Warrants 42s., No. 3. Messrs. Connall's stocks of warrants, 181,780 tons—a decrease of 465 tons. Coal and coke very steady. In the Northern iron trade, in regard to wages and the sliding scale, it may be stated that on Saturday the accountants to the board of arbitration made the quarterly return ending Sept. 30, 1881, from which it appears that the net average selling price of iron for that period was of all classes 5l. 19s. 6d.; ditto, with the exception of rails, 5l. 19s. 8d. The quantities of the different classes of iron sold and the price of each are—Rails, 2018 tons, at an average price of 5l. 9s. 6d. per ton; plates, 95,436 tons, at 6l. 2s. 8d.; bars, 19,058 tons, at 6l. 1s. 3d.; and angles, 28,850 tons, at 5l. 8s. 5d. per ton. It will be seen that iron rails are a very small item in the iron manufacture at present, and steel rails are not included in the return. Those figures give the rate for puddling in accordance with the sliding scale at 7s. 6d. per ton, and there will be no alteration from present rates. During the last quarter there has been a gradual rise in the value of iron, and it is probable that in the next quarter there will be a rise in wages. At Middlesbrough, on Tuesday, there was a large attendance, but little business was done; buyers offered 41s. per ton, but sellers will not accept this, and persist in quoting higher figures. It is believed, however, that iron will be dearer; owing to bad weather shipments have been comparatively small. A large reduction in stocks is anticipated as the reduced make is adhered to. In the finished iron trade there is still great activity, and prices are fully maintained. The coal and coke trades are improving.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Oct. 27.—As the date (Nov. 1) approaches when we had by some traders been promised a second advance of 1s. per ton in the Earl of Dudley's coal, the opinion grows that such action will be postponed for certainly another month. And there are those who this week express the view that no alteration will take place until the new year is entered upon. All will, however, depend upon the action of the colliers and the state of the demand between now and Dec. 1. The markets, yesterday and to-day, were rather less active than a week ago, alike as to raw and rolled iron. But prices kept up, and vendors in no way complained. Staffordshire all mine pigs brought 2s. 6ds. to 5s. per ton more than Shropshire ditto. Thus they were 3l. 7s. 6d. to 3l. 10s. for hot blast sorts. Best part mine pigs were 2l. 15s. to 2l. 17s. 6d. Common pigs were quoted 2l. 5s. to 2l. 7s. 6d. Hematites were less buoyant at 72s. 6d. to 75s., as agents' quotations. Runcorn purple ore was quoted 19s. 6d., which is an advance of 4s. per ton compared with a month ago. Finished iron continues in heavy out-turn at the prices of last week.

The arbitrators under the South Staffordshire Mines Drainage Acts have just given notice of their intention to make a draft mines drainage award for the Old Hill district. They estimate that the rate required will be 3d. per ton on fireclay and limestone, and 6d. per ton on ironstone, coal, and slack. The rate is subject to appeals, which the arbitrators will hear on Nov. 5.

The Caponfield Furnaces at Bilston, the property of Messrs. John Bagnall and Sons (Limited), have been sold to Mr. Alfred Hickman, of the Spring Vale Furnaces, Bilston, for about 12,000l. The furnaces are at present being worked by Messrs. Bradley Brothers under a lease, and the present sale is subject to it. Mr. Hickman has joined the directorate of Messrs. Bagnall's.

Messrs. John Yates and Co. have received a first award for their collection of edge tools, hammers, forks, spades, shovels, &c., as shown at the Adelaide Exhibition.

The finished ironworks of Messrs. Bissell and Son, of the Birchills, Walsall, are about to be disposed of to Messrs. Thomas Brothers, pigmakers, Walsall. Mr. Bissell, sen., contemplates retiring from trade.

A strike amongst the North Staffordshire miners in the district of Silverdale seems almost inevitable. The men, numbering over 1500, have refused the advance of 5 per cent. in wages offered by the masters, and have determined unless the whole advance of 10 per cent. demanded by them be conceded by the expiry of their notice next week, they will go out on strike.

INTERESTING EXPERIMENTS WITH BLASTING GELATINE.—A party of gentlemen interested in limestone mining assembled at the Earl of Dudley's Conygre limestone pits, near Dudley Port, to witness some experiments with Nobel's Blasting Gelatine. Mr. E. F. Smith, the principal mining agent of Lord Dudley, was present, as was also Mr. J. Cole, the general manager, Mr. E. P. Jobson, Mr. Addenbrooke, and others. The limestone is of the hardest kind, and holes had been bored in on the previous day. Mr. William Toye, the representative of the company, and Mr. T. G. Marsh (Dudley), agent for the Midland Counties, conducted the experiments, which were unusually successful, the stone being brought away in great masses, and in good commercial condition.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Oct. 27.—Iron manufacturing and mining in Derbyshire are now looking much healthier than they have done for a considerable time past, with every prospect of their continuing so. The iron trade, so far as the raw material is concerned, is perhaps better than it has been during any previous part of the year, for not only has the demand increased in a marked manner, but prices have gone up to something like a paying point, and stocks have decreased, for iron makers show a decided preference for the ores of Northamptonshire, and the demands made upon the resources of that county are increasing, to the great advantage of the Midland Railway Company, and for which we take to ourselves some of the credit, seeing that the local historians of Northampton have freely admitted that the *Mining Journal* led to the vast resources of ironstone of that county, as well as its quality, being disseminated throughout all our mining districts. The adjoining county of Rutland is now coming to the fore as regards ironstone, as we stated a few years ago would be the case, so that there will be no difficulty in obtaining as much ore, far richer in metallic iron than that of either Cleveland or Lincolnshire, as is required for all the furnaces in Derbyshire, Notts, and South Yorkshire, whilst the Midland Company gives a most favourable rate throughout the extent of its lines. The ore of Northamptonshire, it may be said, is particularly well adapted for converting into steel by the Gilchrist-Thomas process, and that it will be extensively used for that purpose before long admits of but little doubt, seeing that iron for so many purposes is giving way to the rapid advance of steel, and that the age of iron is fast giving way to that of "the age of steel." At Driffield the steelworks are in a high state of activity, there being a brisk demand for rails, the price of which has gone up of late. The house coal trade continues good for the time of year, and a large tonnage has been forwarded to the Metropolis during the past week, especially by the Midland Railway for Clay Cross, Eckington, Grassmoor, Blackwell, and Langley Mill. The London prices continue high, Silikstones being 24s. per ton delivered to customers, whilst the charges at the pits are not more than 9s. per ton, so that merchants' profits must now be really good. Steam coal is still in steady request, both for locomotive and iron-smelting purposes.

In Sheffield business generally continues good, more particularly in the heavy departments, in which the workmen have as much as ever they can do. The mills are working well, there being a large output of armour plates of the newest pattern, not only for our own Government but for the Brazilian and other Governments as well. Ordinary iron plates have been in steady request, as have sheets, wire, and merchant iron. Makers of crucible steel are busier than they were, especially in certain fine qualities, for some of our local manufacturers. The business doing in Bessemer rails is still large, there having lately been an advance of from 10s. to 15s. per ton, and this scarcely equalises the sum charged for hematite pig at the present time with what was charged a month or two ago. Billets of the same material are in fair request, and a good deal of the steel is also being used for some descriptions of cutlery and tools. In cutlery a steady business is being done, the demand being heaviest for the fine qualities of table and pocket knives, a fair amount being for exportation. Edge tools have been going off well lately, and a steady busi-

ness is being done in saws and files for the home markets. Makers of railway material continue to have a rather good time of it, for orders have come freely to hand for wagon wheels, springs, tyres, and axles. The engineering departments are quiet, the work in hand being of a light character, and any briskness there is relates to repairs. At several of the foundries there is great activity in the production of kitchen ranges, stoves, grates, and castings required by builders, as well as in pipes. The make of pig at the furnaces in the district has been well kept up at Parkgate and other places, whilst a good quantity of hematite continues to be imported for the use of steel makers. Prices advanced lately have been well kept up, and the advance on finished iron as well, so that merchant iron sells at 7l. to 10l. per ton, and Bessemer steel from 6l. to 10l. 10s. per ton. One of the leading items in connection with some of our largest works is the lighting of them by electricity, which will be a great advantage to the workmen, seeing that many establishments have to be kept going night and day. The works at Parkgate have been turning out large quantities of mill material, whilst the branch of the Atlas establishment at Swindon Bridge has also been doing well.

In South Yorkshire the coal trade has much improved of late, and prices are better than they were, so far as new orders and contracts are concerned, and a good deal is being forwarded to the London market. Steam coal has also gone off well to Grimsby and Hull for shipment to the Baltic in particular, the early closing of which may now be looked forward to. From Goole during the last few days several cargoes have been sent to the home ports and to Havre, as well as to Ostend, whilst one vessel cleared with coal for Port Natal. The advance in the price of coal is likely to be now followed by a demand for an increase of wages on the part of the miners, a movement in that direction having already commenced.

The works and collieries belonging to the well-known firm of Newton, Chambers, and Co., are to be turned into a limited liability company. The firm has held the highest of reputations for pipes gas-making material of every description, cooking ranges, and certain specialities and patented inventions. The output of coal from the collieries exceeds 600,000 tons a year, whilst the firm has recently been sending at the rate of upwards of 20,000 tons of coal to London alone.

TRADE IN SOUTH WALES.

Oct. 27.—Although the shipments of coal at Cardiff, Newport, and Swansea exhibit a falling off when compared with those of the last few weeks, the fact must not be attributed to the want of orders, but to the adverse weather and the all-engrossing circumstance that the Prince of Wales has at last visited that portion of the kingdom whence he derives his title. The amount of coal sent away from Cardiff since last report has been 92,244 tons; Newport, 21,917; Swansea, 6752. Of patent fuel Cardiff has shipped 2106 tons, and Swansea 977 tons. The trade of Swansea was brought almost to a standstill by the royal visit. The subject of the use of gunpowder in mines still occupies the attention of both employers and employed in the district, and the report of the Royal Commission, just issued, throws some light on the subject. It is there stated that it is impossible to do without the use of gunpowder in mines, according to the overwhelming evidence of many witnesses. The point insisted on by the inspectors is that no one shall be present at blasting except those who are employed in the task. The object of all recent legislation is to minimise the loss of life, and that is one step towards its accomplishment. Some miners raise the cry of *Non possumus* as regards the new regulation, but the same cry has been raised over and over again when any change for the ultimate safety of the miners has been proposed. As the double shift is not adopted to any great extent in this locality, there is always a period when the mines are free from the presence of the coal cutters, and that is the time which common sense would point to as the period for blasting. The iron trade is more healthy now than at any time since 1874, when the trade seemed to depart never to come back again, and people were prepared to pronounce the word *Ichabod* upon that branch of our coal trades. With a sufficiency of orders to keep the works going for the winter and an advance in prices, there is every reason why both employers and employed should rejoice over the present state of things. The tin-plate trade is a trifle healthier, but the excessive output keeps this branch of business under a cloud.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Oct. 27.—Following the revival in the Slate Trade the important industries of brick, tile, and other articles used in the building and sanitary trades of the neighbourhood of Ruabon have quickened recently. These trades, which have of late years grown to large dimensions, took their rise, as far as the manufacture of these articles from the fire-clays of the coal measures, about the beginning of the present century at Trefonnen, near Oswestry, near the southern termination of the North Wales coal field. A successful work was carried on here up to within 30 years ago by the late Mr. Howell. About this date the works were taken by the late Messrs. Croxon, and removed to the Sweeney Colliery. A few years subsequently Mr. Thomas Savon, to whom Wales owes so much in the matter of railway accommodation, started an important works at the Coedy-y-Co Colliery, near Oswestry, and connected them by a branch line with the Cambrian Railway. A new landowner having arisen who objected to such works being near his residence, they were razed to the ground, and the railway stripped after only a few years work. In the meantime the industry took root in the neighbourhood of Ruabon, and the founder of the trade in this neighbourhood is Mr. J. C. Edwards, of the Trefnant and Pen-y-bont Works. The former works are the oldest, and here from the fine bed of clay several yard thick that underlies the Llwynion or Half-yard coal are made the fire-bricks, pipes, tiles, and other things for which the works have become famous. Other works—Bower's, Seacombe's, and others—have also been established, and are in full work manufacturing similar articles from the same and other beds of clay. Within the last few years Mr. Edwards took the Pen-y-bont Works, formerly worked by the Messrs. Gethin, who were long connected with the mineral industries of the district. These works are established to work the deep red marls of the Permian strata, the products being of a fine red colour, fine, dense, and impervious to wet.

I am glad to hear of my friend Lady Ann in the Llanarmon district once more, and I wish the promoters of this and other similar enterprises in that neighbourhood all the success they desire and deserve. It would be interesting to hear of the progress made at the Hope Mountain Lead Mine explorations. The reports from the mine further north on this range seem satisfactory, especially those of the Pioneer group. How is it that the name Pioneer originally given to the copper mine in Merioneth is being gradually transferred to the Flintshire lead mines? Can it be, to parody Tennyson, a case of—"Let the Merioneth perish, but the Flint be more and more." Attention has been directed lately to the unremunerative character of the Welsh railway. There are several reasons why this is the unfortunate position of most of them. First, they cost a great deal too much to make; second, they are mostly in an unfinished state, no having fulfilled the original intention, nor connected the places they were intended to serve; and third, they suffer the penalties of poverty and so are not able to give that accommodation to the public that is necessary to successful working. Could not the letter writer or the Shropshire lead mines contribute a little towards an accurate history of these mines? There must be a great deal of local information which if not recorded will soon be lost.

LUBRICANTS.—In lubricating cylinders and other machinery various forms of unguents of an oily or graphic nature are used, all of which have a tendency to cake and grow sticky, thus necessitating the use of various means for the removal of the deposits. The invention of Messrs. DICKSON and MILLS, of Liverpool, is designed with a view to the introduction of the alkali along with the oil in sufficient quantity to keep the cylinder clean without saponifying the oil, and at the same time prevent the corrosion of the cylinder or the boiler by means of the fatty acids present in nearly all unguents. In carrying out the invention they mix oil, grease, or other fatty matter, but

preferably lard oil, with water. If the grease be solid it is liquefied by means of heat. The proportions can vary largely, but they find one part of oil to one of water very advantageous. They then add an alkali (preferably caustic soda) in sufficient quantity to cause a chemical combination between the oil and water in the limpid state, and in a form fitted for use as a lubricant for machinery. The proportion of the alkali varies with the hardness of the water, the sort of oil used, and the required consistency of the product. When using lard oil for cylinder use they find that about 2 ozs. of a solution of 1 lb. of the purest commercial caustic soda in a quart of water will suffice for a gallon of oil.

LIST OF SMELTING, METAL EXTRACTION, ARSENIC, AND BARYTES COMPANIES IN THE UNITED KINGDOM.

TIN.
Thomas Bolitho and Sons, Chyandour, Cornwall.
Williams, Harvey, and Company, Trethellan and Mellanear, Cornwall.
Daubuz and Company, Cavedras and Treloweth, Cornwall.
R. R. Mitchell and Company, Trefife, Penzance, Cornwall.
Bischo Bridge Company, Bischo, near Truro, Cornwall.
Redruth Tin Smelting Company, Redruth, Cornwall.
Calenick Tin Smelting Company, Calenick, Cornwall.
Charlestown Tin Smelting Company, Charlestown, St. Austell.
Penpoll Tin Company, Redruth.

COPPER.
Vivian and Sons, Hafod, Swansea.
Pascoe Grenfell and Sons, Middle Bank, Swansea.
Nevill, Druce, and Company, Llanelly.
Williams, Foster, and Company, Swansea.
Mason and Elkington, Pembrey.
Copper Miners' Company, Aberavon.
Charles Lambert and Company, Port Tennant, Swansea.
The British and Foreign Copper Company, Liverpool and St. Helen's.
Landore Copper Company, Landore, near Swansea.
Newton, Keates, and Company, St. Helen's.
Baxter and Company, St. Helen's.
Bibby, Sons, and Company, St. Helen's and Liverpool.
W. Roberts, jun., St. Helen's.
James Keys and Son, Whiston Works, Cheshire, Staffordshire.
Cape Copper Company, Swansea.
Ravenhead Copper Company, Liverpool.
Pontifex and Wood, Garratt Copper Mills, Surrey.

LEAD.
Bewick and Partners (Limited), Hobburn, Newcastle-on-Tyne.
Nevill, Druce, and Company, Llanelly.
Runcorn Smelting Company, Runcorn.
The Panther Lead Works, Bristol.
Blackworth Lead Works, Bristol.
E. Pass and Son, Bedminster Works, Bristol.
Weston, Sons, and Company, Bristol.
Cookson and Company, Howden, Newcastle-on-Tyne.
Locke, Blackett, and Company, Wallsend-on-Tyne.
Executors of Jos. Dinning, Haydon Bridge.
Vivian and Sons, Swansea.
Enthoven and Sons, London.
Locke, Lancaster, and Company, London.
Pontifex and Wood, Farringdon Works, London.
Logan Edward, Birkenhead.
Par Lead Smelting Company (C. Remfrey), Par, Cornwall.
Peter Glover and Robinson, Widnes Lead Works, near Warrington.
White Rock Works, Swansea.
Quirk, Barton, and Company, St. Helen's.
Adam Eytton, Llanerchymor, Holywell.
The Cambrian White Lead Company, Brymbo, near Wrexham.
Joseph Walker, Parker, and Co., Dee Bank, Bagillt, and Newcastle.
Governor and Company of Lead Smelters, Nenthead, Alston Moor, Stanhope, Durham.

W. B. Beaumont, "Allendale," Northumberland.
"Rookhope," Durham.
Mill Dam Mining Company, Bakewell.
Joseph Wass and Son, Lea Lead Works, Matlock Bath.
J. Fairbairn and Company, Middleton Dale and Bradwell.
Snailbeach Lead Company, near Shrewsbury.
Pontesbury Lead Works, Minsterley, near Shrewsbury.
J. H. Moore Brough Works, Hope, near Sheffield.
E. Backhouse, Darlington.
Greenside Mining Company, Penrith.
The Keld Head Mining Company, Wensleydale.
John York, Pateley Bridge.
Duke of Devonshire, Grassington.
The Duke of Buccleuch, Wanlock Head.
The Lead Hills Mining Company, Lead Hills.
Lyster, Robinson, and Company, Grinton Moor.
The Arkendale Mining Company, Arkengarthdale.
The (A.D.) Lead Company, Blakethwaite.
R. Milner and Company, Belde Hill.
The Swaledale Lead Company, West Swaledale.
Executors of Sir G. W. Denys, Bart., Surrender, Swaledale.
Charterhouse, Blagdon, Mendips, Bristol.
Waldegrave Lead Smelting Company (Limited), Mendips, near Wells.
The Mining Company of Ireland (Limited), Dublin.

ZINC.
Bagillt Zinc Company.
Vivian and Sons, Swansea.
Kenrick and Son, Wynn Hall, Spelter Works, Ruabon.
Charles Titterton, Phoenix Zinc Works, Warrington Junction.
Dillwyn and Company, Swansea.
Joseph Thompson, Spelter Works, Carlisle.
Ryland Brothers, Warrington.
Crown Zinc Company, Swansea.
Villiers Spelter Company, Morriston, Swansea.
Swan and Company, Maryhill, Glasgow.
Swansea Vale Spelter Company (Limited), Swansea.

PYRITES PRECIPITATE COMPANIES.
Duncan McKechnie, St. Helen's.
The Widnes Metal Company, Widnes.
The Tharsis Sulphur and Copper Company, Widnes.
" " " " Hebburn, Newcastle.
" " " " Birmingham.
" " " " Glasgow and Cardiff.

N. Mathieson and Company, Widnes.
The Runcorn Soap and Alkali Company, Runcorn.
Wigg Brothers and Steele, Runcorn.
Newton Heath Copper Smelting Company, Manchester.
Munro Brothers and Huntley, Flint.
William Russell and Company, Newcastle.
The Bede Metal and Chemical Company, Jarrow, Newcastle.
W. Hunt and Sons, Leabrook, Wensleydale.
William Hunt, Brother, and Co., Castleford.
Harrison, Blair, and Company, Kearsley, Bolton, Lancashire.
Henderson and Company, Irvine.
H. Hills and Sons, Newcastle.
Eytton Copper Company, Mostyn.
Morris and Company, Doncaster.
W. D. Pochin and Company, Newcastle.
South Devon Metal and Chemical Company, South Down, Devonport.
H. G. Lord and Company, Calstock.
Holmshush and Kelly Bray Company, Callington.
Gibbs, Jackson, and Company, Newcastle.

ARSENIC.
Cornwall Arsenic Company, Hayle and Bischo Bridge, Thomas Willis Field, Managing Partner, Marazion, Cornwall.
Devon Great Consols Mining Company (Limited), Tavistock.
J. B. Drayton and Company, Harrowbarrow, Callington.
English Arsenic Company, Roseworthy, Gwinear, Cornwall.
Palmer and Hall, Morriston, Swansea.
A. C. Hadland, Swansea.
Plymouth Mining and Arsenical Company (Limited).
Oakley For Arsenic Works, Calstock.
J. Paynter and Trythall, Bischo Chemical Works, Devoran, Truro.
Holmshush Mining Company, Callington, Redmoor, Greenhill.

BARYTES MANUFACTURERS.
Blackwell, George G., Garston, Liverpool.
Pegg, Harper, and Company, Derby.
Ellam, Jones, and Company, Derby.
Stevens Brothers, Matlock Bath.
C. H. Garton, Lonsdale, Matlock Bridge.
Wm. Hawley, Bonsall, near Matlock Bath.
E. Brown, Bonsall, near Matlock Bath.
Hegginbotham, Stoney Middleton, near Sheffield and Whaley Bridge.
Middleton Dale Barytes Company, Stoney Middleton, near Sheffield.
White and Company, Chapel-en-le-Frith, near Stockport.

NICKEL AND COBALTE.
H. Hussey Vivian, M.P., Swansea.
Stephen H. Barker, Birmingham.
Henry Wigg and Company, Birmingham.
W. Webb and Company, Aston, near Birmingham.
Sir J. Mason, Bromford, Birmingham.
J. H. Williamson, Stoke-upon-Trent.
Rawlins and Son, Liverpool.

GOLD AND SILVER REFINERS.

Vivian and Sons, Swansea.
Johnson, Matthey, and Company, London.
Brown and Wigney, Wood street, Cheshire.
M. Rothchild and Co., Royal Mint Refinery.

SILVER ORE SMELTERS.

Vivian and Sons, Swansea.
Nevill, Druce, and Company, Llanelly.
Raphael and Company, Thomas street, Limehouse.
Shelfield Smelting Company, Sheffield.
E. W. Oates and Co., Sheffield.

ANTIMONY SMELTERS AND REFINERS.

Cookson and Co., Newcastle-on-Tyne.
Hallett and Co., Norway Wharf, London.
Johns and Matthey, and Co., Hatton Garden, London.
Pontifex and Wood, Millwall, London.
J. J. Pratt and Son, Kingland-road, London.

HARDENING AND PROTECTING MATERIALS.

A process of hardening cement, lime, stone, wood, and other materials which might probably be advantageously employed on mine buildings and the like has been suggested by Mr. Alex. Magand, of Paris; it consists essentially in using sulphates of copper, of iron, and of zinc separately or together, and in varying proportions, according to the purposes for which it is to be employed. He claims that he can in preparing the liquid substitute for all or a portion of the sulphates certain salts, or other soluble substances, capable of producing upon the lime, plaster, cement stones, or the like, the same hardening effect as would be produced by the said sulphates. In order to give to the exterior surface of the objects hardened an artificial colour he adds to the liquid some suitable colouring matter. For cement, lime, and plaster the protecting liquid may be applied with a brush, but sometimes he commences by coating the exterior surface with a smooth layer of cement or lime, either coloured or uncoloured, and if necessary a second layer thereof may be applied; in either case the improved liquid will be applied either in one or several layers.

The liquid may be applied as a plaster or as a wash, or the articles to be hardened may be dipped in a bath of the liquid, and the latter may be employed for uniting sand, stones, gravel, scoria, slag, mineral dust from factories, and similar articles or substances, by mixing with the latter a slight quantity of lime or cement in addition to the liquid. Thus blocks or bricks of various dimensions may be formed, without baking or compressing the same, by using river sand, gravel and shingle from the sea shore, waste materials from retorts, stones, marble, slate, scoria, slag, and various waste materials from manufactories. He mixes these substances with a very small quantity of cement or lime, and then unites the mixture by means of the liquid, which imparts to the whole a powerful cohesion in a very economical manner.

It is claimed that the invention can be carried into practice at any place, so that great economy is effected in the matter of transport or carriage, particularly in localities where building stone is not found naturally. The said blocks or bricks may be utilised not only for rough building, but may also be employed for decoration or ornamentation; and by moulding the substances, they may be shaped into the most artistic forms the produce figures in relief, cornices, statues, and other decorative objects. The mixture is not only useful for hardening the exterior surface of material, but when used for mixing the ingredients renders the mass hard throughout.

PRODUCTION OF SILICIOUS PIG IRON.—For the manufacture of a highly silicious pig iron specially adapted for conversion into steel by the open hearth or Siemens-Martin process, Mr. A. Crawford, of the Govan Ironworks, Glasgow, has patented an invention, the object of which is to produce a pig iron containing silicon to an extent ranging from 7 or 8 per cent. upwards. A pig iron containing about 12 per cent. of silicon is found specially advantageous in the hereinbefore mentioned steel making process, or in equivalent processes of producing liquified steel for making steel castings. It is to be understood that the pig iron constituting this invention is to be used not only for casting ingots for subsequent conversion into bars, plates, or other uses, but also that it may be employed for the direct making of steel castings other than ingots. He mixes with the raw materials constituting the charges of blast furnaces a proportion of the slags which are produced in the "open hearth" steel process, in the Bessemer steel process, or analogous slags otherwise produced. It is a characteristic of such slags that they contain a very large percentage of silica, sometimes as much as 50 per cent. or more thereof, and that the phosphorus and sulphur are low in such slags. The requisite portion of silicon is imparted from the silica and taken up by the pig-iron produced from the materials charged into the blast furnace. In smelting these slags with hematite or Spanish red iron ores about 27 parts by weight of slag is used to 100 parts of such iron ores, but this proportion will vary according to the richness of the slags in silica, and of the ores in iron.

MANUFACTURE OF IRON AND STEEL.—To economise fuel and prevent waste Mr. G. Love, jun., of Lancaster, Durham, arranges flues on each side of and immediately adjoining the working door, or over that door, for the purpose of carrying away the smoke and products of combustion from the fuel in the fire employed, as well as the fumes or gases arising from the heated metal under operation. By thus providing these flues immediately adjoining the working door, cold air entering by that working door is drawn away at once to those flues, and prevented from acting to chill the heated metal under operation or to the interior of the furnace. The smoke and products of combustion with the vapours from the metal and air entering by the working door are together drawn into these flues, which may be arranged to pass upwards or downwards as may be desired. The metal under operation may be heated from one or more fires. Air to support combustion of the fuel in the fire may be admitted either from under the chamber for heating the metal under operation or from the front or otherwise.

MANUFACTURE OF IRON AND STEEL.—At the present time large quantities of steel and iron are produced by the Siemen-Martin process, and like processes, in which a bath of cast-iron is raised to a very high temperature in a regenerative or other suitable furnace, and being treated usually with additions of iron scrap and oxide is brought to a steely condition, in which state the molten metal is run out of the furnace and is received into moulds to form ingots. Now, Mr. J. A. Huggett, of Kensington, has discovered that this process can be worked more advantageously than heretofore by employing steam to blow the metal whilst it is contained molten in the furnace. He introduces the steam by means of a small iron pipe connected with a steam boiler by a flexible connection. The end of this pipe he immerses for some inches beneath the surface of the metal, and in an inclined direction, so that the steam issuing from the pipe may mechanically promote circulation at the same time that, by its chemical action, it causes a rapid rise of temperature. The advantages which he obtains are a great saving in the amount of time required to bring the metal bath to the state and temperature suitable for running the metal out of the furnace into the ingot moulds, a more complete separation of the sulphur and silicon than can otherwise be conveniently obtained, and the removal of the silicon when desired at an earlier stage than it otherwise would be, so leaving the steel with a high proportion of carbon, whilst the separation of the silicon has already been effectually obtained. In order to obtain sound ingots he causes the metal to enter the mould at the bottom, and he closes the top of the ingot mould with a loosely fitting cast iron stopper. Through the stopper there is a small hole. Instantly when the mould has become full of metal, and when the metal is close up to but not in contact with the under side of the plug he admits a stream of water through the hole in the plug directly on to the top of the molten metal in the mould. He allows the water to run until the ingot is set.

PROTECTING IRON FROM CORROSION.—The invention of Mr. F. M. Lyte, of Putney, consists in an application of electricity for preventing the corrosion and consequent fouling of iron or steel ships, vessels, or structures, by attaching to them suitably arranged conductors in such a manner that the said ship, vessel, or structure when immersed in or wetted by an electrolytic solution, sea water for example, shall become a cathode. The protective influence of studs or masses of zinc, or other metal electro positive to iron, attached to iron plates immersed in water or certain saline solutions has been already tried and proved, but for certain reasons this arrangement has been hitherto neglected as being difficult of application, costly, and imperfect in its action. Utilising, however, the modern discoveries in dynamo electricity, Mr. Lyte proposes so to arrange one or more wires or conductors connected with the negative poles of one or more batteries or dynamo-electric machines as to convey the currents to the parts to be protected, or to distribute the effect as evenly as may be convenient over the whole or part of the ship, vessel, or structure to be protected, the anode being at the same time immersed in or connected with the electrolytic solution. By this means he sets up a deoxidising or reducing action all over the surface of the iron or steel to be protected, thus either arresting or materially diminishing the oxidation to which iron or steel are

naturally prone, and he obtains thereby as a result the desired preservative effect.

PORTABLE DRILLING MACHINES.—For the purpose of producing a portable self-acting adjustable feed drilling machine that can be readily adapted and clamped to heavy pieces of machinery or iron bridge work for the purpose of drilling or boring holes in the same at a speed proportionate to the hole to be drilled an ingenious arrangement is proposed by Messrs. LEES, of Hollinwood, Manchester. A suitable frame supports the drill spindle and accompanying driving apparatus, which are secured to a horizontal arm, which arm when required will revolve so as to point the drill spindle to almost any angle. The revolving motion of the drill spindle is obtained by the application of a handle or pulley and a pair of ordinary bevil wheels, one of which is fixed to the handle or pulley and the other to the drill spindle. The stud carrying the handle or pulley and its bevil wheel may with equal convenience occupy their several positions in order to facilitate the drilling of the work at difficult angles. The self-feed of the drill spindle is effected by the application of four small differential spar wheels fixed above the bevil wheel on the drill spindle, two of which revolve with and are on the drill spindle, and the remaining two differential wheels are on a stud parallel to it, which, with the wheels keyed on it, is lifted when the drill is to be put out of gear. The lifting of the stud and the two wheels thereon enables the operator to put the tool quickly to or to withdraw it speedily from its work.

MANCHESTER GEOLOGICAL SOCIETY.—The annual meeting of members was held, on Tuesday, at the Literary and Philosophical Society; Mr. J. Dickinson presided. Thereport (read by Mr. J. S. Martin hon. sec.) stated that during the session just concluded the society had satisfactorily maintained its position. The meetings had been well attended, and a lively interest shown generally in the work of the Society. Mr. George Gilroy, of Wigan, was unanimously chosen as President for the ensuing year. Mr. W. Bryham and Mr. W. W. B. Hulton were elected vice-presidents; Mr. H. M. Ormerod was re-appointed hon. treasurer; Mr. J. S. Martin, hon. secretary (Mr. J. E. Forbes, a former hon. secretary, being associated with him, in place of Mr. G. C. Greenwell, jun.); and the following were elected members of the Council:—Mr. Mark Stirrup, Mr. Clegg Livesey, Mr. M. W. Peace, and Mr. G. C. Greenwell, jun. Mr. E. Pilkington and Mr. J. Greenwood, jun., were appointed auditors.

DEPOSITING METALS.—An improvement in depositing metals, which has for its object the deposition of one metal upon another by the action of acid in an economical manner and without the aid of electricity, as usually applied in electro bronzing, has been invented by Messrs. Maltby and Bradford, of Rotherham. The invention consists in immersing the article upon which the metal is to be deposited, for a period of time varying according to the thickness of the deposit required, in a vessel containing a solution of aquafortis (or other suitable acid) and water, in which is also placed and immersed a sufficient quantity (in plates or other suitable form) of the class of metal which is desired to be deposited.

THE WENDRON DISTRICT.—The Lovell is reported to be looking much better on the south lode, where they have a good lode in the winze sinking below the 50, which is dipping east. Some rich work has recently been sent to surface from this part of the mine, and at the office on the mine some large rocks of tin may be seen, which are similar to the rich tinstone broken some years since in East Lovell, when the lode was worth over 1000*l.* per fathom. A new lode has recently been discovered, which produces tin in paying quantities close to the surface. A new engine-shaft has been sunk to the 10, and a good portable engine fixed. Sinking has commenced below the level in a profitable lode. It is to be hoped that the improvements effected will enable the adventurers to shortly meet the costs; and, when this lode is a little more developed, to resume dividends. East Lovell, which some years since contained the richest course of tin ever discovered in Cornwall, is again in full swing. Two or three of the north lodes are being opened, and in a short time several good improvements are expected. A fair staff of miners are employed underground in developing the different points of operation, and the resumption of dividends is anticipated. Poigren and Gardina United adjoins East Lovell on the east, and has one or more of the same lodes passing through the sett. A private company has been working here for some time, expending much money in clearing a long and troublesome adit and in sinking (within the last six months) a substantial engine-shaft from the surface to the adit. Preparations are being made for sinking below on a good lode, and a small engine is to be erected forthwith. Old Wheel Lovell sett has recently been granted to an influential party, and plans and prospectuses are being prepared with the view to forming a company to work the Goblet lode, which about 22 years ago was worked to a depth of about 50 fms. on a rich course of tin. Combellack has a large lode, and the mine is about 50 fms. deep. The tinstuff is rather low in quality, the returns being about 1 ton of tin per month on the average.

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FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, Oct. 24: Produce 11 days, first division of October, 5750 ois, value 33000; yield, 52 ois. per ton. Profit for the month of September, 10000. All going on well.

DON PEDRO.—Mine captain's letter, dated Sept. 24: Drainage: In perusing the diary it would at first appear that the forking of the mine is, and has been, very irregular, but bearing in mind that when the surrounding or adjoining ground is drained to a level with the water in shaft, the shaft rocks rapidly, until the weight of water forces its way through more rapidly, and consequently the water in the shaft remains at a standstill, and apparently the water is not forked, though in reality it is forking. The lowest point yet reached to the present time is 31 ft. below the eastern of the jack-head. Machinery and pumps kept well greased, and attended to daily.—Inclined Shaft: Several small repairs made; bottom of shaft boarded to prevent any water washing the ground from under the timber-work.—Adit Level: Several sets and legs changed, and back and side laths renewed.—No. 1 Side Level: 3 sets put in and blocked tight.—No. 2 Side Level: 6 sets put in and blocked; timber work decayed, and requires considerable repairs.—Surface Works: Several repairs made to the reduction and other works.

LA PLATA MINING AND SMELTING.—Smelting statement for the week from Sept. 25 to Oct. 3 (inclusive): Ore purchased, 702 tons; ore smelted, 735 tons; silver produced, 32,305 ois.; lead produced, 153 tons; silver-lead base consigned to refiners, 204 tons; value of consignments, \$49,356; equal to 10,382.

LAST CHANCE (Silver).—Telegram from the agent at Salt Lake:—"Ten tone first-class ore sold during last week realised \$71 per ton. Development of ore shows about the same."

RICHMOND CONSOLIDATED.—Cablegram from the mine at Eureka, Nevada:—"Week's run, \$43,000, from 855 tons of ore. Refinery, \$43,000."

G. H. Card. Oct. 5: I beg to hand you report of the different operations for the past week. The north drift from Letzte tunnel cross-cut has been extended 6 ft. without any change to mention. The 200 north has been advanced 5 ft. in ground. The 200 south has been drifted 4 ft. in hard limestone. The 200 south from west drift has been advanced 16 ft. in very favourable ground for ore; some low grade ore and galena have been found, but not in any quantity to value. The 300 north has been extended 2 ft. in very hard limestone. The 400 north from No. 11 chamber has been advanced 3 ft. without any change to mention. The 700 east has been drifted 8 ft. in limestone. The 1200 cross-cut from shaft has been advanced 21 ft.; now in a total distance of 67 ft., all in quartzite. The chambers show an improvement since my last, especially No. 14 west, in which a very good body of ore is being developed. All the machinery both in mine and smelting works is in good working order.

EBERHARDT.—F. Drake: Statement of progress for two weeks ending Oct. 1: 6000 feet Drift West: Feet run to Sept. 17, 740 ft.; run for two weeks ending Oct. 1, 62 ft.; total distance run to Oct. 1, 802 ft.; run for the month of Sept., 131 ft.—2000 ft. Drift East: Feet run to Sept. 17, 105 ft.; run for two weeks ending Oct. 1, 25 ft.; total distance run to Oct. 1, 131 ft.; run for the month of Sept., 47 ft.—2000 ft. Drift East: Upper Level easterly, run for two weeks ending Oct. 1, 12 ft.; total distance run to Oct. 1, 12 ft.; run for the month of Sept., 32 ft.—2000 ft. Drift East: Length of upraise connecting the two levels run in Sept., 32 ft.; total Sept. driving, 222 ft.—Remarks: The 6000 ft. west drift is in hard lime, owing to the long distance from the incline upraise, the main source of our air supply. I find it necessary to lay in the drift a larger air pipe, which I am now having made, and will have in place as soon as possible.—2000 ft. Drift East: During the last few weeks the rock in face of the work in the 30 ft. (upper) level has alternated from ore to lime and to ore again, some days looking very favourable, showing some high grade ore. As yet we find it only in bunches. I am, however, feeling very confident that we will, in this prospecting, soon come upon larger and good bodies of ore. I have not decided to take the men from the lower drift and put them into the upper level, but drift westerly on the ore feeders that we are now following easterly.

FLAGSTAFF DISTRICT.—The directors announce that a telegram has been received from Professor Vincent announcing his arrival at Utah, that he had inspected the company's mines, and that the mineral aspects were highly satisfactory.

QUARTZ HILL.—Oct. 28: The telegram received to-day says: "35 ois. Troy, and 8000." Mill has run since this week.

PLACERVILLE.—Price, Oct. 4: Ore is now being extracted from the following points: The stopes above the 4th, 5th, and 6th levels. The vein will soon be encountered in the 700 ft. level in a direct line this time from the shaft. I sincerely hope that good quartz will be encountered here. For the time I have stopped drifting on the west vein in the 700 ft. level, and will soon winze down from the 6th level on the ore body left under the foot. So far the west vein on the 7th level has not given any considerable quartz; seams of quartz carrying gold have been observed, and there is a fair chance that this will yet develop into an extensive ore body, for I cannot see why at this great depth a small body of low grade ore should be encountered, and the present one is of the same quality. I am satisfied that within the limits of the ground owned by the Placerville Gold Quartz Company there is a large amount of good pay quartz; but, so far as you can see by looking at the map, we have only worked or explored some 300 ft. in length. The mine should be opened up further north where good ore was once encountered by previous owners, somewhere about points A1 and A2. A shaft should be sunk here, and the fourth level should be extended north from H to meet it. With the power drills it would not take long to drive this level. You will note by the superintendent's last weekly report that 23 ft. was made in the cross-cut, and the present one is a very good prospect, as there is a probability of finding the continuation of No. 2 ore body in this direction. No. 5 north is not producing any ore at present. The No. 6, below the 600 ft. level, is very poor at present; the ore is about 2½ ft. wide, and very low grade. The drift from No. 6 winze, 30 ft. below the No. 6 ore body, has been advanced 10 feet during the week; total, 26 feet from the winze. The 300 feet level west cross-cut has been advanced 14 ft. without any change. We have shipped 53 tons of ore, and have 46 men at work.—Bullwhacker: The 400 ft. level continues in favourable ground for drifting; progress this week 22 ft.; total, 104 ft. The 100 ft. level, below the 400 ft. level, is looking well, and is being worked. The ore shipped from the mine at present work has been abandoned on the south stop, it being worked through to the old stopes below the 350 ft. level. We have shipped 22 tons of ore this week, and have seven men and 4 contractors at work.

RUBY AND DUNDERBERG CONSOLIDATED.—Report on mines for the week ending Oct. 2: Dunderberg: The 700 ft. level has been advanced 16 ft. during the week, and is now connected with the No. 7 ore body (above the 700 ft. level), which is in the present position, and is a very good prospect, as there is a probability of finding the continuation of No. 2 ore body in this direction. No. 5 north is not producing any ore at present. The No. 6, below the 600 ft. level, is very poor at present; the ore is about 2½ ft. wide, and very low grade. The drift from No. 6 winze, 30 ft. below the No. 6 ore body, has been advanced 10 feet during the week; total, 26 feet from the winze. The 300 feet level west cross-cut has been advanced 14 ft. without any change. We have shipped 53 tons of ore, and have 46 men at work.—Bullwhacker: The 400 ft. level continues in favourable ground for drifting; progress this week 22 ft.; total, 104 ft. The 100 ft. level, below the 400 ft. level, is looking well, and is being worked. The ore shipped from the mine at present work has been abandoned on the south stop, it being worked through to the old stopes below the 350 ft. level. We have shipped 22 tons of ore this week, and have seven men and 4 contractors at work.

EUREKA (NEVADA).—Report on mines for the week ended Oct. 3: Bald Eagle: The 150 ft. level is very favourable ground for drifting, and looks very promising for ore. Several small seams of low grade ore have been found during the week. Progress this week 30 ft.; total, 72 ft. from the shaft. The 150 ft. north is in very favourable ground for drifting; progress this week 30 ft. This drift will be continued 50 ft. further, when connection will be made with the north end of the old stop.

HOOPER HILL.—Extract from letter from resident engineer, dated Oct. 11, received Oct. 25: The unprecedented draught throughout this country has entirely dried up the creeks, and the water is very low, and is more than enough water to run five stamps at the present moment. Under these circumstances the quantity we are passing through the mill is very small indeed. I see no signs of rain, the weather is clear, and the barometer up to 76°. I do not think we have had a fair day's rain for five months or more. If it does not rain soon we shall have to shut down entirely.—Mine: We are stopping and sinking as usual in Oallimore, but the quality of the ore has varied considerably of late, does not carry so much free gold, but more sulphurets are noticeable. Being at the present short of miners I have had to suspend Briel's Tunnel. Provost shaft is being sunk with all force. At this time we have one of the drills working here. We are making fair progress in sinking the new trial shaft standing north off Hawkins's shaft. As soon as we cross-cut out I hope to cut into the ledge of good ore worked upon by the former workers. The drills, air-compressor, boiler, and building, as per contract, have been delivered and erected. The drills start to-morrow. The altered position of compressor and boiler from that fixed upon when the contract was made, made it necessary to have several hundred feet of extra air-pipes as well as water-pipes, to force the water up the hill from the mill, the only place from whence we could obtain a water supply all to meet the compressed boiler and these pipes have taken a considerable time to get, causing so much delay in the completion of the work. I am sending a parcel of sulphurets to New Jersey to be treated, and as soon as I have the results will send them on. I propose sending over the result of the first and second clean-up. The second clean-up will be about the 25th inst.

COLORADO UNITED.—Advices dated Oct. 3 are as follows:—There is nothing reported concerning the mine since last writing. Everything is completed in the engine room. There has been 1000 ft. of 3-inch rope for hoisting, fixed this morning, and operations will commence again this afternoon. A contract has been let to W. Matthews and company to lay a line of silver cable 100 ft. at \$38 per foot. Since the date of this letter a cable has been received and published from Mr. Hamill, announcing the successful starting of the hoisting machinery, and the resumption of mining operations.

GOLD HILL.—The company have received the following letter from their manager at the mines:—"Since my last we have gone over and examined very good timber, but for the reason stated in my last letter many of the owners are unable to sell, while those who can sell, and have good timber on their land, and within easy distance, ask rather a high figure for it. One person who has 300 acres near this place asked \$14 per acre, but now he offers it at \$10. Whereas about four miles distance we can get good timber with the land at \$5 per acre, but none will sell the timber without selling the land also. I have some more woods to see this week, and shall then decide what is best to be done. I am expecting daily to hear that the saw machinery is ready for shipment. The veins we intersected in making the reservoir referred to in my last continues to open out satisfactorily. I deem it my duty to keep you informed of the state of the mine as it actually is at the time of writing, consequently my reason for referring to these veins, which by some would be considered insignificant, and which in some places would really be so, but in the Gold Hill estate, where the other paying lodes, the Randolph and Bernhardt included, did not at surface give greater, or perhaps so great, promise, the case is different. These veins are in fact, and very promising. At surface they were only about 1 in. thick, and now at the depth of only 6 ft. are about 4 and 6 in. respectively, and portions of both show good samples of gold, and apparently in depth will unite; at present

they are only about 3 ft. apart. Availing of my son's visit to me from South America on his way to England, I have sent you a small box containing a few samples of ore from each vein, that you may see the nature and size of them; the box is divided by a piece of wood, the largest piece came from the south vein. I do not wish to unduly raise hopes; in fact, it would be unwise to build too much on what we have yet seen, but I can truly use the Cornish homely saying, "It is a kindly gossip, and well worthy of a trial."

The 7-in. working-barrel has not yet come to hand, and we are unable to account for it, unless it is delayed at some railway station by an accident, on the lines of which several have been reported lately. We are much in want of it, and until it arrives it will not be advisable to do more in forking out the water at Bernhardt's level, but keep it a few feet below the plunger, so that the men may be kept employed in opening and securing the levels eastward and westward of the shaft to enable us to reach the lode to explore it. The pipes for bringing home the water from Flint shaft were shipped nearly a fortnight since with some machinery for gentlemen in this neighbourhood, but have not yet arrived. A messenger has been dispatched to look them up. About 1600 cubic feet of masonry has been completed for the stamping-mills, and this work in a few days more will be advanced as far as it is required for the present. I am glad to say we have succeeded in making a contract for the large and principal pieces of timber required for the stamping-mills. We have, however, some miles to send for them, as we are to fetch them. Very good progress has been made towards the erection of the saw-mill, which for the present will occupy the eastern part of Crosby's mill-house. The engine has been taken abroad, cleaned, repaired, and removed to the site selected for it, and a solid bed of masonry has been built for it to rest on. The boiler has also been examined, cleaned, and repaired, and a new set of tubes put in. It has also been taken from Randolph's shaft, and fixed in its place. The erection of stack, building the flues, and fixing framework for the saw-mills are in hand, and will I expect be ready by the time the machinery arrives. At the Flint shaft we have still a couple of hands employed enlarging the bottom part of the shaft, and which also explores the vein upon which the shaft was sunk. The excavations for the new reservoir progress favourably, and it will be ready for the masons as soon as they can be parted with from other works.

CANADIAN COPPER AND SULPHUR.—Francis Bennetts, Oct. 14: At the St. Francis and Acton Mines there are no new features of importance to communicate to you. The ores that we have at these mines are about to forward to the smelting works at Capetown, and as they are very suitable for fluxing the Hartford and other pyrites ores, we anticipate favourable results from their use. At the Bolton Mine the vein in the south shaft sinking under the 10 is producing some fine pieces of copper ore; the shaft is being sunk on a portion of the vein only, but as soon as we are deep enough for a level we shall cross-cut through the vein. The ores obtained from our workings are, I think, not so easily roasted as the ore from the Hartford Mine, but if mixed would probably do well to roast, and it is the intention to send the Bolton Mine ore also to Capetown for treatment. At Hartford Mine, No. 5 shaft, there is a good vein of ore in the shallow level east, in the winze sinking in the bottom of the 40 east, and in a winze sinking in the bottom of the 50 east. The vein in the 50 east is without change, but in the 70 east the vein is improving in size and quality of ore. At No. 1 shaft the stopes continue to look well, and are turning out fair quantities of good grade ore. At the Capetown smelting works the smelting and roasting is being done very satisfactorily.

MICHIGIPOTEN.—J. Opie, Sept. 21: Your favourable reply of the 20th ult. at hand. I am pleased that the box of specimens gave satisfaction. Batters' shaft is down to about 40 ft. The lode is much the same as last reported. Within the past fortnight the heavy rains that have fallen have greatly retarded our sinking, and we have not made that progress that we anticipated. In the Office shaft on No. 1 lode west end is without change. On No. 1 east the ground is good, and we have been working a most favourable appearance for copper. We have forked the vein in Beve's shaft, and have started eight men to work. At the adit and 5 fms. below there is a lode standing to surface, that will produce good mill work. Below this point our predecessors have crossed the lode, and sunk to the north. The shaft or hole is 37 ft. deep. In the bottom there is a good level driven north a distance of 71 ft., with a view, I presume, of cutting the No. 2 lode. From the distance at surface and the changed rock there is no question but that the lode is near. Also at the bottom there is a drift put south 12 ft., with a view to cut the lode lost above. This shaft being sunk 25 years, the timbering surface is very much decomposed, and is not safe to work under. We must therefore be careful to timber it at surface, and cut it down so that in our future working it shall be no impediment either to our pumping or hoisting. We calculate to do it with a pair of six men in about five weeks. Beve's engine-bed is completed, and Mr. Bell is engaged in putting in the engine for hoisting and pumping. Mr. Williams is fully employed about the crusher work, and has the greater part of the castings placed. During the past month the carpenters have put up a new smith's and fitter's shop 40 ft. long by 20 ft. wide; also a carpenter's shop 60 ft. long by 24 ft. wide. This may appear unnecessary at a glance, but when we have seen the work done before us, we will see that it is necessary. We have thus a place to make anything needed for our machinery, and the men kept constantly employed, notwithstanding variable weather during the winter season. Mr. Batters duly arrived here, and spent about two months on the island. To commemorate the event we re-named the new shaft and called it after him; for his anxious solicitude towards the welfare of the men his visit will be long and gratefully remembered by them.—Diamond Drill: We have bored the second hole 180 ft.; the first 94 ft. through dark trap, 13 ft. through amygdaloid 32 ft. trap, 15 ft. amygdaloid 28 ft. In the first vein we took out some 300 lbs. of copper; the second, not so good, but in the same vein we found copper of good quality.—Bonner Location: Water being drawn out of the mine, partially secured, we made an underground inspection. We found about 180 ft. of levels driven on the silver-bearing vein. From the appearance of the lode on the margin of the lake or at surface I am fully convinced that our predecessors worked only for nickel and silver. The shaft and underground workings being 60 fathoms west of the well-developed and massive copper-bearing lode, it was my impression that a shaft ought to have been put down on the amygdaloid vein with all possible speed during the winter, so that by the next season we would have been prepared to erect machinery and have a shaft to supply the required need of stuff for the continuous working of the stamp mill. However, as Mr. Batters recommended the suspending of work on this location on account of scarcity of labour, no doubt after an interview with Mr. Batters you will be prepared to advise us respecting further proceedings at this mine.

SCOTTISH-AUSTRALIAN.—The directors have received advices from Sydney, dated Sept. 10: The sales of coal from the Lambton Colliery during the month of August amounted to 11,749 tons.

SCOTTISH-AUSTRALIAN.—The directors have received a telegram from Mr. Morehead, dated Sydney, the 27th instant, stating that it had been agreed to raise the price of coal from the beginning of 1882 to 10s. a ton, less 2½ per cent. discount.

ENGLISH-AUSTRALIAN GOLD.—Mr. Mark Pollard, Fryerstown, Sept. 12: In the 360 ft. level the drive going south has been extended 7 ft. during the past fortnight, with quartz 3 ft. thick, and 16 ft. from east to western side of the stone; ground not so hard, but the quartz is very poor; I see a little gold in breaking it. In the 320 ft. level the rise from the back has been put up 19 ft. during the past fortnight, and has the winter in the same vein, without meeting with any quartz. I have removed the men further down the rise to drive the western wall, where there is water coming out from the wall, with two small leaders, thinking I might meet with a block of stone at this point. We have extended the 240 ft. level 10 ft. during the past fortnight; quartz very small; have slate country. We have 20 ft. further to drive to the No. 2 rise; then I shall connect the drive with that rise, and block the ground out between the two rises. I am driving on the western side of the stone. I think there is better quartz on the eastern side of this block.

Fig. 232.—Remarks: The stopes in this level are looking just the same for quartz. I have not broken through to the tributaries' old working at the 210 ft. level, but I have broken through to the tributaries' old working at the 210 ft. level. The stopes at this level are not looking so well going north, as the quartz is splitting up into small leaders from 1 to 2 ft. in thickness, and the ground is very hard sandstone, with small bars of slate. I see very little gold in breaking the quartz.—The 180 Feet Level: We have two men stoping towards the south boundary, but they have not come up to the little drive as yet, which you can see in Mr. Miller's plan. The stopes in this level are looking just the same for quartz. I have not broken through to the tributaries' old working at the 210 ft. level, but I have broken through to the tributaries' old working at the 210 ft. level. 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lendidly. We are clearing the solar at the 12 with all speed, and as soon as completed shall again drop the lift towards the 30.

DEVON FRIENDSHIP.—Charles Thomas and Son, Oct. 26: The adit end is all improved, and yields 6 tons arsenic muncie per fathom. No. 1 stope in back of the adit is improved. Other stopes continue to yield the usual quantities of arsenic. On Saturday we started the new wheel, and found everything thoroughly satisfactory. In less than three hours' working we forked 10 fms. below the adit. It is now clear, and the shaft will probably reach the 30 in a week or two. We shall now commence to lay the tramroad from Bennett's shaft to the crushers, build a dry and smith shop at Bennett's, and proceed as rapidly as possible with the new arsenic refining works. On Thursday we sold 4½ tons of tin, at 56½ 10s.

DEVON COPPER AND BLEND.—W. Skewis, Oct. 27: We are proceeding well with the cleaning up of the engine-shaft, which is now nearly 5 fms. below the 62. The 62 is cleared and secured 35 fms. west of the cross-cut and about 8 fms. east. The lode in the stope in the bottom of this level is worth 20s. per fathom. In the back of the 40 west the lode is worth 10s. per fathom, and in the back of this level, west of Ayre's rise, is worth 12s. per fathom, and in the stope east of this rise is worth 10s. per fathom. All the machinery is in good working order.

DEVON GREAT CONSOLS.—Isaac Richards, Oct. 27: Wheel Josiah: In the 144 east, east of the count-house shaft, on the new south lode, the lode is 4 ft. wide, composed of capel, quartz, and small quantities of copper and muncie ores.—Wheal Emma: Inclined Shaft: In the 137 east, east of Friend's cross-cut, the lode (part being carried 4 ft. wide) is composed of capel, quartz, peach, muncie, and a little good quality copper ore.—New Shaft, New South Lode: In Burgoynes rise in the 144 east, the lode is 2 ft. wide, of a promising character, and producing small quantities of copper and muncie ores.—In the 115 east the lode is 3½ ft. wide, of a promising appearance, and producing some good quality copper and muncie ores.—Railway Shaft: In Bray's cross-cut south at the 205 the ground continues favourable for progress, and is highly mineralised. In the 190 west, on the south part of the lode, driving is still being continued by the side of the lode for more speedy progress. In the 175 west, on the south part of the lode, driving is still being continued by the side of the lode for more speedy progress. In the 175 west, on the south part, the lode is 3½ ft. wide, and worth 2 tons of copper ore and 3 tons of muncie per fathom. In 160 west, on the south part of the lode, the lode is 2 ft. wide, of a promising character, and producing small quantities of copper and muncie ores.—Watson's: In the cross-cut south at the 88 the ground continues tolerably favourable for progress and congenial for mineral. At the western shaft we have an influx of water, which renders sinking difficult without mechanical means of keeping the shaft drained; we have, therefore, decided to attach a line of rods to the line at the engine-shaft for the purpose of working a small lift here. This will not be a matter of much expense, as we have the greater portion of the necessary material on the mines.

DEVON GREAT UNITED.—Isaac Richards, Oct. 27: In Willford's shaft, sinking below the 104, the lode is 3 ft. wide, composed of capel, quartz, peach, some very fine arsenic muncie, and a small quantity of copper ore. In the 60, west of Willford's shaft on the Capel Tor lode, the drivages are being carried by the side of the lode, and the same remark will apply to the 60, west of Watson's shaft. In the 50, west of Watson's shaft, the lode is 2 ft. wide, composed of capel, quartz, peach, muncie, and a little copper ore. In the cross-cut south at 20, east of Willford's shaft, the ground continues without alteration.

DRAKE WALLS UNITED.—Moses Bowden, Oct. 27: There is nothing particularly new to report this week. All the surface and underground work is being proceeded with as fast as possible. We shall have about 10 tons of black tin ready for sale early in November.

EAST BLUE HILLS.—B. Bennetts, Oct. 27: The lode in the adit east end is 2½ ft. wide, and worth 8s. per fathom. In the 40 east end the lode shows signs of improvement in width, and tin is also making its appearance. In the winze below the 30 it is 3 ft. wide, and worth 6s. to 7s. per fathom; this winze is now between 7 and 8 fms. deep. The 30 east end is being driven almost wholly on tribute at 13s. 4d. in 14.

EAST DEVON CONSOLS.—James Browning, Oct. 25: We continue to make good progress in driving, and every effort will be made to reach the lode as early as possible. The cross-cut has been driven upwards of 4 fms. We estimate that we are about 2 fms. from the lode. In the last 6 ft. driving we have met with two branches of a most promising character, and they are making towards the lode. This morning I find the end in the cross-cut driving north is getting wetter, and showing strong indications that we are not far distant from intersecting the Brookwood lode. I feel confident as to the future of this mine, believing it will prove to be all that can be desired.

—James Browning, Oct. 27: I have been underground this day, and am glad to find a most promising character in the ground. The ground is highly mineralised, and judging from present indications I am led to believe that we are not far distant from meeting with a rich course of ore.

EAST HERODSFOOT.—T. H. Bennett, Oct. 26: We have broken a few stones containing lead ore in Bewe's lode during this week, and it is becoming more defined, and I hope we may safely regard it as a good omen for the lode further ahead. We have again led to the men to drive at 4s. 15s. per fathom.

EAST LONG RAKE.—H. B. Vercoe, Oct. 27: The lode in the 50 fms. level west maintains its size and value, and is opening out a very valuable section of lead ground, and which will be available for stopping in the roof immediately that the end is advanced far enough, so as to give room for another set of men to get to work on it. Nothing can be more satisfactory than the way in which the mine is opening out to the west, and I have no doubt as we near the junction of the other lodes it will become increasingly productive. In the 50 fms. level east we are driving on a branch or lode which has crossed in a north and south direction. I hope to be able to report a discovery here at an early date. The stopes in roof of 50 west continue just as last reported. We are busily engaged on the surface preparing a parcel of lead ore for the market. The engine and machinery are in good order and working well.

EAST ROMAN GRAYE.—Arthur Waters, Oct. 27: The 190 stope is at present in a small lode and not to value; ground rather hard. The 109, north towards boundary, is worth 3 to 4 tons per fathom. The lode in the 97 stope is 4 ft. wide, worth 1½ tons of lead ore and some "saving stuff" for blende per fathom. The 99, north of winze, is still by the side of the lode. The stopes in back of the 86 south are together worth about 3 tons per fathom. The new boiler with air compressor have been ready for work since Tuesday last. The "drills" and "clamb" with fittings have reached Minterley to-day, and we hope to have everything on the mine to-morrow afternoon. We shall, therefore, be ready to start boring out to-morrow morning. We have to-day sampled 40 tons of lead ore for sale next week.

EAST VAN.—W. H. Williams, Oct. 27: Cross-cut EE is driven 53 fms.; the ground is very wet, and intermixed with muncie, similar in character to what we met with in the cross-cut above, on the hillside. The lode in the brook continues to give very encouraging, but as yet no lead of value has been seen.

GAWTON.—George Rowe, Geo. Rowe, jun., Oct. 22: The lode in the 107 fms. level is 7 ft. wide, of a most kindly appearance, yielding 18 tons of arsenic muncie, impregnated with good quality copper ore, per fathom. The lode in the 105 fms. level east is yielding 15 tons of muncie, mixed with ore, per fathom; altogether a very kindly appearance, going towards the hill pretty nearly 20 fms. deep. The lode in the 95 fms. level east is yielding good stones of ore, mixed with arsenic muncie, and improving in character. All other points are without change. Our new arsenic works are going on very satisfactorily, and we are exceedingly busy in preparing stores to receive the arsenic previous to going through the refinery, &c.

GLENROY.—R. Rowe, Oct. 26: I am unable to report any alteration in the mine since last week, excepting that the stope in the 25 is still improving from the recent falling off, and from appearances I hope we shall soon have a good lead for lead in the 25. In the shaft we are at present putting down a new sinking-lift to go below the 122.

GODDARD'S.—R. H. Vivian, Oct. 27: Since my last advice the men have been stopping away a piece of ground in the lode west of engine shaft, so as to be able to sink to better advantage, and also carry the shaft down larger. The lode has improved in appearance; it is evident we shall have a much larger vein and more lead and blende ore as we go deeper. As I informed you last week, we have a continuous rib of solid lead ore about 2 in. wide in the middle of the lode, and a mixture of lead through the vein, now worth ½ ton of lead to the fathom. I am every confidence in the future of this mine.

GOODEVRE.—R. Knott, Oct. 26: In the drivage east of shaft the lode is 6 ft. wide, but not producing so much tin as when reported on last week. In the shallow adit cross-cut, which is being driven towards the shaft, no change in the ground calling for remark. In the deep adit cross-cut the ground is of a most favourable description, and at the end is letting out much water, which I look upon as a favourable indication. During the past week we have driven about 6 ft. on the course of the lode, discovered in the wheel-pit, which is about 4 ft. wide, and producing saving work for the stamps. This is undoubtedly the lode that the former workers sunk out, and from which the tin was returned. The surface work is being urged on with all possible dispatch, and I am expecting the wheel here daily.

GORSIEDD AND MERLYN.—W. Edwards, Oct. 27: The 70 east keeps about the same as reported, only that the heading is still getting more plum with little more lead on the heading side. The men have driven 1 yard 2 ft. since last report. The 90 west I am pleased to say keeps improving for blende. The vein looks most favourable, and more shale is coming between the beds. The men have driven 1 yard 1 ft. 6 in. since last report. The lead is worth 1 ton 6 cwt. per fathom. The south driving of the 50 east looks most promising. I expect to meet with a change in the ground very soon. There is a good deal of lead mixed in the stone, and a strong feed of water coming out of the forebreast that makes me think we are near an east and west lode. The men have driven 3 yards 2 ft. since last report. The lead is worth 6 cwt. per fathom. One of the tribute pitches is looking a little better this week. In No. 1 pitch in roof of 70 east the lead is worth 16 cwt. per fathom. No. 2, two men, worth about 14 cwt. per fathom. No. 3, two men, is worth about 13 cwt. per fathom. We sell another parcel of lead to-morrow.

GREAT DOWDY.—W. T. Harris, Oct. 27: Roskel's Shaft: The lode in the 110 east maintains its character and encouraging appearance. An increase of water issues from the forebreast, and the ground is rather easier for progress. This level west of the lode is 4 ft. wide, very promising, and better progress is being made. The lode in the 80 level west is producing saving work for lead and blende, and indications are exceedingly good. The dam in this level east has very successfully been removed, and operations commenced in the forebreast, the appearance of which is most encouraging, and the lode is producing some splendid lead ore. From the porous nature of the ground, a good deal of water issues therefrom, but is easily kept under by the engine working 3½ strokes per minute. A good branch of ore is also left in the bottom of this level, which may be considered an encouraging feature for the 110 east. There are also two very powerful north and south lodes, from which some nice stones of ores have been broken. These will receive attention when the level is further advanced.—Level Engine: The lode in the 60 east is opening out most splendidly, now worth fully 3 tons of lead ore per fathom, and improving daily. This is a continuation of the great run of ore, which has yielded so bountifully for a long time past in the roof of the level. The tribute pitches maintain their value, and show no sign of falling off. Nos. 3 and 5 are worth together 7 tons per fathom. No. 1 is worth 2½ tons per fathom. No. 2 is worth 1 ton of lead and 2 tons of blende per fathom, and promising for an improvement.—Garden Shaft: The stope in back of the level from No. 2 is producing some good stones of lead and blende in paying quantities. The level west upon new joint opens out encouragingly, and the ground is favourable for progress.—Brammoch and Office Shafts: The pitches continue to yield both lead and blende in paying quantities. The mine throughout is improving. Will report more fully next

week. Surface work and dressing are making usual progress, and good returns of lead and blende are being made. Next week we shall sell another 30 tons of lead ore, and in a few days a parcel of blende.

GREAT LAXEY.—F. Reddiffe, Oct. 26: During the past week or so there has been considerable improvement in the 247 end, driving north, and the lode worth fully 20s. per fathom, but it has reached the slide, and while this is being cut through the value is uncertain, but we expect a better lead still on the eastern side. The 235 end north is without change. The winze sunk from the 220 is deep enough for this level when the end shall be far enough on to hole to it, which we expect will not now be long.—Dumbell's: The 230 end north has maintained a good value, but just now the lode is a little coarse, and worth 30s. per fathom. In the 215 end the branches have diverged, and only one is carried in the present end, which is worth 25s. per fathom. When the level is holed to the winze, and the other branch is worked upon, we expect it to add greatly to the value. The winze is deep enough, and it is expected to hole to it in a day or two. Driving south at the 70 the end has reached Agnash slide, and is now driving through it with some blende in the lode. There is no change to speak of at any other point or in the stope since our detailed report.

GREAT RETALLACK.—J. Harris, Oct. 22: In the 64 east the ground is more favourable for driving than when I last reported, and the men are making good progress, the lode being composed of quartz and killas, with good stones of blende embedded, but not in sufficient quantity to value; the lode, however, is strongly charged with sulphur muncie throughout our drivage, and this, with the easy character of the ground, ought to lead us to find a bunch of blende very shortly.

GREAT WEST CHIVERTON.—J. Curtis, Oct. 25: The deep adit to drive west on the south lode by two men the month at 65s. per fathom. Lode 1 ft. wide, composed of quartz and muncie. The deep adit to drive west on the north lode by two men at 55s. per fathom; lode 4 ft. wide, with stones of muncie, &c., in it. A very kindly looking lode for the depth.

GREEN HURTH.—James Polglase, Oct. 21: The bargains are producing as follows:—No. 1 driving over standard level 4 tons per fathom. No. 2 south end (bottom level) is without change. No. 3 stope, south of rise above 30 level, is in a poor neck of ground at present. No. 4 stope from rise, towards Vipond's sump, 3 tons per fathom. No. 5 stope, north from rise above 30 level, 3½ tons per fathom. From No. 6 north end (31 level) I have broken lead to-day; lode just coming to this end. No. 7 stope, north from Vipond's sump, is worth 2 tons per fathom. We have opened a stope over the standard level at once; lode worth about 8 tons per fathom. No change in the adit level cross-cut south. We shall at once prepare the preliminary material for sinking.

GWYDYR AMALGAMATED.—J. Roberts, W. Sandoe, Oct. 26: Clementina: The 34 driving north from shaft continues to look well, and the lode has improved during the past two or three days, it is now worth full 1 ton of lead ore per fathom. Set to two men at 8s. per fathom. The 34 end driving south from shaft is let to two men at 11s. per fathom. The lode here is rather poor at present, and the ground hard for driving. The engine-shaft sinking below the 34 is going down very satisfactorily, and is now down below the level from 5½ to 6 fathoms. The lode is strongly sprigged with lead, and we expect to meet with a better lode at a very early date.—Aberllyn: Here there is no change whatever to speak of. The lode in the No. 2 end driving north, and also in the sump sinking below this level, are just the same as reported on last week. The end is being driven at 12s. per fathom, and the sump sinking at 16s. per fathom.

HINGTON DOWN CONSOLS.—Thos. Richards, Oct. 26: The engine-shaft is down below the 12 fms. level 4½ fms.; the sinking is still going on favourably, and the lode is producing in places good stones of copper ore. In the 12, east of the engine-shaft, the lode continues to produce very rich stones of black, grey, and yellow copper ore, and is altogether in its general character exceedingly promising. No. 1 lode in the deep adit level, east of the south cross-cut, contains capel, quartz, and arsenic muncie, with a little black and yellow copper ore intermixed.

KILLIPRETH.—J. Michell, J. Tamblin, Oct. 25: The lode in the bottom of Hawkes' shaft is 3 ft. wide, and worth 25s. per fathom. We have about 9 ft. more to sink, when we shall begin to drive east and west to make the 30. By doing so, we hope in a very short time to leave down the water from the winze in the bottom of the 20 east of shaft, which is now suspended in the air. The lode in the 20 east of shaft is 2½ ft. wide, and worth 10s. per fathom. In this level driving west the lode is from 4 to 5 ft. wide, producing a little tin, but not enough to value. The lode in the stope east and west of winze in the bottom of the 10 is not so productive as last reported. The other bargains are looking just the same as at the meeting.—Old Sump: In the 40 driving east, the lode is 2 ft. wide, and worth 5s. per fathom—looking very kindly, with a large stream of water issuing therefrom. The lode in this level driving west is disordered at present. The lode in the 30 driving east is producing a little tin, but not enough to value.

KILLIPRETH.—R. Rowe, Oct. 19: We resumed sinking the shaft on Saturday morning. There is a strong rib of quartz and lead about 8 in. wide running through the shaft, much as last reported. In the 20 north the rib of lead cut into in the west side of the level about 4 ft., holds on good, and at present shapes to come back in the side of the level; it is from 6 to 8 in. wide, yielding good stuff for lead, and so far shows to be much the best in the bottom of the level. We attach importance to this as likely to develop itself into something altogether new; at present we are uncovering it from the 4 ft. thickness of rock, and shall soon prove it further. The 20 south is not yet through the slide. The stope in the roof of this level is 5 ft. wide, and worth 10s. per fathom. In the 20, the lode is not so wide, that is the lead-bearing part, as lately reported, now about 6 in. wide, good stuff for lead. I expect another month's sinking will put the shaft deep enough for a new level. In the 20 south we got through the slide yesterday, or to the footwall of it, showing a width at this level of 10 fms.; the rock on the other side showed strong spots of lead to-day; we shall now drive east to endeavour to find the lode. In the 20 north the lode found in the western side of the level is still going forward about 1 ft. wide, good for lead along the bottom of the level, but split into strings and branches in the upper part; it looks at present to be undisturbed altogether in the side of the level and the shaft as well. I hope it may prove to be so; we shall ascertain this as soon as possible.

KIT HILL GREAT CONSOLS.—Isaac Richards, Oct. 27: Fair progress continues to be made in driving at the deep adit level. The late very severe weather has much interfered with our surface operations. It is now, however, moderated, and every effort is being put forward to get the erections completed as fast as possible.

LADY ASHBURTON.—J. Willcock, Oct. 27: We have driven the cross-cut north about 3 ft. to the 30, through ground strongly mineralised for the production of silver, lead, and copper ores. We are intersecting branches and floors of spar, strongly charged with muncie, blende, and spots of rich yellow copper; this is a good indication, and plainly shows the lode is near at hand. We have driven east of engine-shaft 3 fms. on the course of the south underlayer. The lode at present is small, but very kindly in appearance, producing sulphuric muncie, peach, quartz, prian, and a little copper. I have not cut into the north underlayer yet, but shall do so next week, when I fully anticipate a change for the better. I strongly advise driving the south cross-cut, which is already driven about 10 fms. to the 30, through ground strongly mineralised for the production of silver, lead, and copper ores. The lode in the 20, the lode is not so wide, that is the lead-bearing part, as lately reported, now about 6 in. wide, good stuff for lead. I expect another month's sinking will put the shaft deep enough for a new level. In the 20 south we got through the slide yesterday, or to the footwall of it, showing a width at this level of 10 fms.; the rock on the other side showed strong spots of lead to-day; we shall now drive east to endeavour to find the lode. In the 20 north the lode found in the western side of the level is still going forward about 1 ft. wide, good for lead along the bottom of the level, but split into strings and branches in the upper part; it looks at present to be undisturbed altogether in the side of the level and the shaft as well. I hope it may prove to be so; we shall ascertain this as soon as possible.

LADY BERTHA.—Thos. Neill, Oct. 25: Since my last report the ground in the 53, east of engine-shaft, has a little improved and the lode is looking a more promising. The lode in No. 1 stope in the back of the 40, east of the engine-shaft, is still looking well, and will produce 20 tons of muncie and 5 tons of copper ore per fathom; this stope is let to carry the north part about 5 ft. wide, and worth 25s. per fathom. The tramroad is completed to the new shaft in the upper part; it looks at present to be undisturbed altogether in the side of the level and the shaft as well. I hope it may prove to be so; we shall ascertain this as soon as possible.

LEAD ERA.—J. A. Ede, Oct. 27: The favourable indications of the past fortnight shows a further tendency to improve, and I hope, seeing that we have to all appearance gone through the bar, that the improvement will continue until it culminates in the realisation of our best wishes and my most sanguine expectations.

LLANDEGLA.—H. Hotchkiss, Oct. 26: The heavy rains have caused the water to rise above the upper level, where, however, it only remained for a portion of one day. I have all hands in this level now, rising up on the lead ore lately discovered; and in the east end of the rise the ore continues to make up, there being but very little to be seen in the west end. As we have now a great quantity of stuff broken in this level, I intend to have this cleared up at once, and then go to work in the east end of the rise upon the best ore, and if it should hold on we shall be able to break a very nice pile. The lode in the 80, west of Gundry's shaft, on the present level, is 5 ft. wide, and yielding 3½ tons of ore per fathom. We have passed through the branch of spar and muncie recently intersected in the north cross-cut in the 90, west of Gundry's shaft, and we find the ground inside the branch to be easier for driving, and still letting out some water. The lode in the winze in bottom of this level is 4 ft. wide, yielding 3 tons of ore per fathom, but we have been rather hindered in the past few days with water in the bottom of the winze. The lode in the 110, west of Gundry's shaft, is 3 ft. wide, and still yielding 2 tons of ore per fathom. The lode in the rise in back of this level is 4 ft. wide, also yielding 2 tons of ore per fathom, and letting out a good deal more water. There is no change in the 120 cross-cut, driving north of Gundry's shaft, but our progress will be better now we have completed the shaft for winding from this level. The ground is just the same as when last reported in the 70 cross-cut, driving north from the main lode, west of Gundry's shaft. The lode in the 110, west of old engine-shaft, is 2 ft. wide, yielding good stones of muncie and copper ore, and letting out an increased quantity of water; we consider this end to be very near the cross-cut. The lode in the 110, east of the old engine-shaft, is 5 ft. wide, and yielding some saving work for copper and tin ores. There is no change to notice in any other part of the mine.

MERIONETH MINING AGENCY (Glasdrissa).—This mine has got fairly to work, and with present appliances is dressing from 50 to 60 tons of copper ore per month. The ore in the rock is 40 ft. or more wide, and the supply in sight will last for years to come. An immense body of pyrites has also been discovered of superior quality.

MOELPRE.—James Richards, Oct. 27: Good progress has been made in the driving of the deep adit level towards the lode during the last fortnight. The ground still maintains that highly mineralised nature as previously named in my reports. During the last week I have had the air-machine and pipes completed, which will facilitate the driving of the level considerably; consequently, we shall arrive at the desirable point sooner than we otherwise should have done.

MONA CONSOLS.—T. Mitchell, Oct. 27: The various works are going on very well here, and the draining of the mine is progressing satisfactorily. There are two horses engaged drawing out the water with the whim, and they relieve each other every six hours. The carpenters will commence putting on the wood-work to the roof of the buildings to-morrow.

MORFA DU.—T. Mitchell, Oct. 27: The various points of operation here continue to look much the same as for some time past. The lode at the 20, near Ida shaft, is looking very well, and we are preparing to sink a winze in bottom of the level in a good lode of bluestone. The parcel of copper ore just sold will be weighed off this week.

MOUNT CARBIS.—W. Tregay, Geo. Johns, Oct. 27: The lode in the 38 east end produces good stones of tin. The lode in the 38 west end is worth 6s. per fathom. The lode in the winze in bottom of the 38, east of the 20, west of the lode in the 27 east end is worth 10s. per fathom. The lode in the 27 west winze is worth 15s. per fathom. No other changes to report.

MYNYDD GORDDU.—Thomas Kemp, Oct. 26: Burnett's Engine-shaft: I am sorry to say nothing has been done in the bottom this week, owing to the water being in. However it will be out this afternoon, when the men will resume work. There is no particular change to notice in the 46 end west of cross-cut since last report; worth 10s. per fathom. The lode in the 46 end east of cross-cut is also without any change to notice. The part of the lode carried in sinking the winze below the 34 is still composed of killas carrying ribs of calc spar, intermixed with a little ore. Saving work for the dressing floors. The ground appears to be little more favourable for opening, consequently the men are making somewhat better progress. The part of the lode carried in driving the 12 end west of shaft is still of the same composition as previously reported, chiefly friable spar, at times showing spots of ore. We have let two tribute patches to four men, one over the 12 west of cross-cut and the other on the cross-branch in the 24, south of the main lode, at 8s. 10s. per ton, the ore to be made marketable. The different stopes are yielding their usual quantities of ore. The carrier is carrying the 3 tons of silver-lead ore to the station to-day, which will be forwarded to Messrs. E. C. Goodway and Co. to-morrow morning.

NEW GREAT WHEAL VOR.—Henry Cowling, Oct. 26: We are still sinking and stopping at No. 2 shaft as fast as possible. Since my last report we have been strengthening our stopes. Together with the shaft they are from 3 fms. to 4 fms. long, 6 ft. wide, and tinny throughout. All the length upon the line of the lode is producing slabs of tin, worth from 75s. to 80s. per fathom, or 22s. to 240s. per stope. Every foot we sink, either in shaft or stopes, the lode is increasing in value. The last parcel brought to surface is the richest I have seen since the commencement. It always improves as we proceed in the works, and I have never in all my experience seen anything like it before at such a shallow depth.

NEW KITTY.—Wm. Vivian, Oct. 27: We are making good progress in sinking. The engine-shaft is now about 5 fms. below the 24; sinking at 20s. per fathom. In the 24 driving east the lode is 2 ft. wide, producing a little tin, but not to value. In the 24, driving west, there is no change to notice since last reported.

NEW PENROSE.—J. Curtis, Oct. 26: The deep adit to drive west of the old engine shaft on the Trewas copper lode, by four men, at 7s. per fathom. Lode at present time split in branches and letting out a quantity of water. The engine to clear and secure, by six men, below the surface, at 15 fms. and from what we can see we believe it is near the back of level-lode 18 in. wide, with spots of yellow copper ore, tin, and muncie; a very kindly looking lode for the depth.

NEW WEST CARADON.—N. Richards, Oct. 26: There is nothing new in the cross-cut driving south of Hallett's shaft at the 38, but we are opening out east on the last branch intersected in this cross-cut, and find it is getting larger, and will now yield fully 1 ton of copper ore per fathom. The main lode in the 42, west of this cross-cut, is a promising looking lode, and will yield ½ ton of copper ore per fathom; this lode in this level, east of cross-cut, appears to be getting into the shoot of ore coming down from the rise in the back of this level, the lode in the western end of which is about 3 ft. wide, and will yield fully 2 tons of ore per fathom. The lode in the eastern end of the rise is also 3 ft. wide, and will yield 2½ tons of ore per fathom; and if we get as good a lode in this level driving east towards West Caradon as we have in the rise, and there is every appearance of it at present, we shall soon have a good mine.

NORTHERN LEAD.—T. Tonkin, Oct. 27: Brandon Walls: The shaft and levels are now drained to a depth of 11 fms.; the greatest bulk of water is about our present depth, as the old workings are very extensive in this part of the mine. After we get to the 25 there will be less water to contend with below that depth. The mine is looking favourable at Stofafed Burn. The west section stopes above the 42 yield 25 cwt. of ore to the fathom. The east section stopes are variable, and the 15 fms. level stopes maintain a yield of 12 cwt. to the fathom. The adit stopes yield 8 cwt. to the fathom. All the stopes are on tribute. We have sold 20 tons of lead ore, at 8s. 17s. 6d. per ton.

NORTH D'ERESBY MOUNTAIN.—R. H. Vivian, Oct. 27: The water in the shaft is rapidly decreasing, so that we shall now make much better progress. The lode shows every indication that we are approaching richer ore ground. It is mainly composed of soft carbonate of lime and some beautiful lumps of lead ore. The present value, taking the lode all through, is 10 cwt. of lead to the fathom.

NORTH GREEN HURTH.—James Polglase, Oct. 21: The low level cross-cut is in the same congenial channel of ground. The same may be said of the upper level cross-cut; another small branch has been intersected, which may be expected as we get nearer the vein. The surface men have been repairing roads all this week.

NORTH HERODSFOOT.—T. Trelase, Oct. 27: We have dropped the ladders to the 117, and I went into the level north about 25 fms.; the timber appears to be in pretty good condition, and the level as far as seen can be secured very much cheaper and quicker than the levels we cleared above. We cannot tell yet how far the water is below the 117, but if it is low enough we shall secure the shaft to the 127, and clear that level instead of the 117. There is no change in the 80 end; the ground continues easy for driving, and we are hoping to get an improvement here shortly. The 50 end is still unproductive, but is letting out a little more water, which we consider a favourable indication. I have put the men who formerly worked the stope in the back to stope the bottom, where the lode will yield 7 cwt. of lead per fm. We are making fair progress with the dressing, and purpose sampling 20 tons of lead on Saturday next. We have still a large quantity of stuff at surface to dress, which will yield fully another 20 tons, which we hope to get ready at the end of another month.

NORTH PENSTRUTHAL.—Stephen Davey, Wm. Polkinghorne, Oct. 27: We have no change worthy of special remark in either of the points since last report.

NORTH WALES FREEHOLD COPPER AND SMELTING.—H. G. Vercoe, D. Douglas, Oct. 26: In handing over our usual weekly report, we have no particular change to advise you of; the different points in the mine continue just as last reported. The shaftmen are still engaged cutting lodge, &c. at the 30 at engine-shaft. The 30 cross-cut west has not yet reached the footwall of the great copper lode; we continue to intersect branches of quartz spotted with sulphur and copper. I expect the next few days will show a great improvement, as the main ore-bearing part of the lode cannot be far off. In No. 2 sump there is a fine lode from 6 to 7 ft. wide, producing copper of rich quality from one side to the other. In the 20, south of No. 1 sump, the lode is hard, and not producing copper to value. The stopes in ends of No. 1 sump, above the roof of the 20, are producing fairly good quality copper for dressing. The new crushing machinery has arrived at Conway, and no time will be lost in getting it erected and at work, and may be ready to treat larger quantities of ore, and make the accumulation of copper now on surface ready for market. All surface work proceeding regularly, including the building of new carpenter's shop and smithy.

PANDORA.—H. Nottingham, Oct. 26: Engine-shaft: The engine-shaft sinking on new lode is down 6 fms. below the 45; the lode in the bottom is 10 ft. 6 in. wide. On the footwall there is a course about 2 ft. wide, of very nice lime spar intermixed with large cubes of lead and blende. I have now decided to leave the portion of the lode, and continue the sinking on the hanging side, that we may be able to make better speed in getting the shaft deep enough for a 55 fms. level. The end driving south in the 45 is looking better for lead, worth 25 to 30 cwt. per fathom. Since we are compelled to suspend the No. 1 winze in the 33 south I have placed this set of men to commence a winze in the bottom of this (45) level 5 fms. south of shaft; the lode here was worth 2 tons of lead per cubic fathom, and I look for the same yield in sinking below the level. The stope over the level south of shaft is worth 1½ ton of lead and 1 ton of blende. The stope north of shaft is worth 15 cwt. of lead and 1 ton of blende per fathom; the lode is narrowing as we ascend with these stopes, similar to what is seen in the shaft, and in consequence of this the lode is less than the lode in the 33, showing this to be a new course of ore making along the bottom of the mine. We have two stopes working over the 33 south, worth together 35 cwt. of lead and 2 tons of blende per fathom. The tribute bargains show no material alteration. We have not been able to keep the crusher so well supplied with stuff this week through several hindrances. We have had to repair the small drawing-wheel, and we have to-day put on a new steel wire rope for winding, which was much needed, and hope to get up plenty of stuff for the crusher now again. The carpenters are still busy putting fresh supports and stays to the launders and tramways in places of those blown down and broken by the storm, and roofing the engine-shed.

PANT-Y-MWYN.—Enoch Parry, Oct. 27: The lode in the 22, driving west of Modlyn, maintain its size and favourable character. The indications in and about the end at present are very like those seen in and near to Griffith's shaft, where a very rich run of lead ore was met with in the footwall portion of the lode. We had a great flood of rain in this neighbourhood the end of last week, which we were glad to say burst through the obstruction in the day level, where our men have been clearing. We are not able to get into the level at present, owing to the force of water coming on through the shaft. As the water is so high, we can examine it we will give you particulars. All interested can look upon the opening of the level as a good job done for the future workings of the mine, and it should never be allowed to fall in and fill up again.

PARYS COPPER CORPORATION.—T. Mitchell, Oct. 27: We have no change of any importance in the 90 south since last report. The No. 1, west of cross-cut, continues to look much the same as last week. The No. 2 west has further improved; the lode is opening out wider, and will yield at present a little over 3 tons of copper ore per fathom; this is a nice looking lode, and likely to further improve. The 90, east of cross-cut, on the C. D. lode, is looking very promising, and we hope to have a further improvement here soon. No change at any other point. We shall commence weighing off the copper ore and precipitate sold to-day immediately.

PEDN-AN-DREA UNITED.—Wm. Rosewarne, James Thomas, Oct. 26: We have during the last few days fixed an 18-in. plunger-lift at the 40 in Bain's engine-shaft, which is working well, have commenced draining the mine below the 47, and at our present rate of forking shall get to the 55 in one week from this date.—North Lode: The skip-road in Bain's underlie shaft is made right for driving to the 47, and we shall set the plunger-lift at the 47, and the level above at once, so that our quantity of tinstuff will be much increased thereby; this lode is large, and varies in value from 20s. to 40s. per fathom.—New Lode: The lode in the stope in the back of the 40, east of cross-cut east of Street shaft, is worth 60s. per fathom. The lode in the 40, west of cross-cut east of Street shaft, is worth 10s. per fathom on the south part. The lode in the 40, east of the cross-cut east of Street shaft, is worth 20s. per fathom for the part carried with no north wall; we intend cutting in further north so as to prove its value. We have four men driving the cross-cut north from Skimmer's lode at the 18, east of Street shaft, and have cut a branch continuing some good stones of ore, and are daily expecting to cut the south part of the new lode.—Skimmer's Branches: The lode in the 40, west of the cross-cut east of Street shaft, is producing fairly quality tinstuff. The lode in the 30, east of cross-cut at Street shaft, is worth 25s. per fathom. The lode in the 30, west of cross-cut at Street shaft, is worth 10s. per fathom. The lode in the 18, west of cross-cut at Street shaft, is worth 10s. per fathom.—Bragg's Shaft: We expect in the course of a few days to see the lode at the 40, south of Bragg's shaft, which is said to be a very productive of tin; upon this lode there has been but little done. Our engines and pitwork are

ONTARIO SILVER.—The 72nd monthly dividend of 50¢ (2½) per share has been declared for September.

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The Mining Market: Prices of Metals, Ores, &c

METAL MARKET—LONDON, OCT. 28, 1881.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Pig, 3mn, f.o.b., Clyde...	2 9	2 9 11	English, ingot, f.o.b., 104	0	0
" Scotch, all No. 1 ...	2 11	2 11 8	" bars ...	105	0
Ears, Welsh, f.o.b. Wales	5 10	0	" refined ...	106	0
" in London	6 0	0	Australian ...	97	10 0
" Stafford ...	7 0	0	Banco ...	98	0
" in Tyne or Tees ...	5 12	6 17 6	Straits ...	97	0
" Swedish, London ...	9 17	6 10 0			
Rails, Welsh, at works ...	5 10	0 5 12 6			
Sheets, Staff., in London	8 10	0			
Plates, ship, in London	7 10	0 7 15 0			
Hoops, Staff., in London	7 10	0 8 0 0			
Nail rods, Staff., in Lon.	6 15	0 7 5 0			
STEEL.					
English, spring ...	12	0 18 0			
" cast ...	30	0 45 0			
Swedish, keg ...	15	0 0			
" fag. ham. ...	15	0 0			
LEAD.					
English, pig, common ...	15	0 0			
" L.B. ...	15	0 0			
" W.B. ...	15	0 15 15 0			
" sheet and bar ...	15	7 6 10 0			
" pipe ...	16	15 0			
" white ...	21	0 23 0			
" patent shot ...	17	15 13 0			
Spanish ...	14	15 0 14 7 6			
NICKEL.					
Metal, per cwt. ...	15	0 16 0 0			
Ore, 10 per cent. per ton	20	0 25 0 0			
QUICKSILVER.					
Flasks, 75 lbs. war. ...	7	0 0			
SILVER.					
Mexican ...	17	5 0 17 10 0			
English, Swansea ...	17	0 0			
Sheet zinc ...	21	5 21 15 0			

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for
Canada; 1X 6s. per box more than 100 quoted above, and add 6s. for each X.
Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Business this week, although fairly good, has scarcely been so animating as of late. For a while that spirit of speculation which has given so much life to our markets has in a measure been checked. There has been a greater desire to secure profits, and, perhaps, to some extent even to "bear" the markets, in anticipation of slightly reduced rates, owing to recent heavy purchases on the part of consumers and shippers creating the idea that buyers' wants may probably for the time being have been satisfied. However, there is not much selling business doing in this manner, because of the apparent great risk which is run thereby. Where speculation is most ripe there we find statistics good and improving, the deliveries maintained on a fairly large scale, and the supplies kept within the wants of the trade, while, in addition to this, favourable circumstances abound, whereby the markets are satisfactorily affected. On the other hand, seemingly the only adverse feature which just now is influencing our markets is the uncertainty of the immediate future value of money, and should the money scare blow over there seems literally nothing to depress the markets or to in any way retard the upward progress of prices; and here, perhaps, it may be well to quote a remark made by one of the leading contemporaries this week, which states: "The supply of money in the market, notwithstanding the low cash reserve shown by the last Bank return, is fully adequate to meet current demands." Therefore, at the present time there does not appear much cause for anxiety, and it is a matter for operators themselves to decide as to what precautionary measures should be taken to meet any difficulties which might arise through an advance in the value of money.

But leaving this subject, for there is nothing certain yet as to what effect it will ultimately produce in our markets, and treating merely with present facts, which must inevitably have their influence, it is a good sign to see that nearly every feature in the various markets indicate the continuance of a good demand for metals. As already hinted it may be the impression in some quarters that the recent increased business must have satisfied buyers' current requirements, but this is not the sole question that has to be solved. What will be the future wants of the trade is a question of far more importance, and in answer to this there appears to be but one general opinion. At the moment the various works, whether they be situated in the producing centres of Scotland or the North of England, in the manufacturing neighbourhood of Staffordshire or the busy shipping ports of Wales, they are all unanimous in their reports of being well off for work, while in many cases they are said to hold enough orders to keep their mills briskly engaged for some months to come. This signifies that buyers at least anticipated their immediate future wants to be large, otherwise they would not have placed such extensive orders for forward delivery. Sellers too are evidently of the same sanguine opinion, which is proved by the heavy supplies of some metals, and however much the policy of maintaining the production in excess of consumption is to be condemned, yet by its continuance it would appear an almost indisputable evidence that sellers look for a large and good market for their produce at some not far distant date.

COPPER.—This market at the early part of the week was a little unsteady, while a fair business, taken on the whole, was being transacted, and during the last day or so a recovery in prices has been effected. The tone of the market continues good, and there is considerable strength given to prices by the good deliveries. This is one of the favourable features in the markets, and what is even still more satisfactory to note is the fact that they are in excess of the supplies, which is proved by the last few statistics. Not unfrequently statistics are what operators base

their purchases or sales upon, and it is not a little remarkable that since statistics have for so long been particularly favourable speculators have not made their purchases with greater freedom. It may possibly be argued that to continue to buy at the present advanced rates would incur too much risk to make it worth the while of buyers to enter into fresh contracts, but yet, notwithstanding that this should not be overlooked, and is a feature which would have made it risky to purchase had statistics as well not improved, yet since there is such a sensible reduction being effected in the total public stocks during the last few months, and only a moderate rise made in prices, it may fairly be regarded that the advance has not been more than is warranted by the existing circumstances in connection with the trade. Of course, upon each rise, be it ever so small, there will be fresh holders who are willing to rid themselves of their stocks, and this necessarily checks prices from advancing too rapidly, and thus an opportunity is given to consumers to continue making purchases upon favourable terms, and it is well, perhaps, here to note that they do not hesitate to avail themselves of the advantage which is thereby afforded, as is clearly proved by the good deliveries. In manufactured works are still said to be well off for orders, but fresh enquiries have this week not been very numerous.

IRON.—This market is void of any particular change. The price of pigs has fluctuated more or less, but the result of these fluctuations has only been to leave prices much about the same as they were a week ago. The market at times has been rather depressed, owing to an absence of speculative business, but there does not appear to have been any falling off in the regular demand, and reports show good shipments, comparing well with the corresponding period of last year. With reference to the shipments, there is still, as we have before shown, a great deficiency to be made up with those for last year, and it seems rather questionable unless present shipments very much increase, even upon their present improved scale, if in future the comparisons will be satisfactory with those of even 1879, for there is now only a difference of about 2000 tons between this and that year, which difference it would appear somewhat improbable to maintain much longer unless a good increase be made in the exports of this year owing to the augmented shipments of the latter end of 1879. However, it is not in the shipments, providing, of course, that they are maintained upon the present average, that any anxiety need exist they are now fairly good, as the following returns from Glasgow will show; but that which depresses the market in a stronger degree, and is likely to cause prices to recede, is the heavy public stock which is in Scotland, and notwithstanding the reduced make, it continues to increase by thousands of tons per week. The curtailed supply in the Cleveland districts, however, appears to be working well, and since the supplies have been reduced, there has from week to week been reported a slow but steady decrease in the public stocks.

This is evidently a good feature, and must ultimately prove, if continued, a great benefit to holders who have stocks of iron in the Middlesbrough stores, and must also to some extent bear its influence upon the Scotch market. The Glasgow warrant market opened this week with a somewhat depressed tone, and only a limited business was done at the early part of Monday, at prices ranging from 49s. 9d. to 49s. 3d., from which point a smart rally was effected, and the price recovered in the course of the day to 49s. 10½d. On Tuesday the market was more, and a very fair business was transacted, at prices ranging from 49s. 9½d. to 50s. 6d. cash, closing with sellers at the latter figure, and buyers offering 1d. less; and on Wednesday a still better tone prevailed, the official quotation being 50s. 7½d. Yesterday the market was for the most part steady at 50s., but improved at the close to 50s. 3d., 50s. 4d., and to-day the market has again been easy, and closes at 49s. 9d. to 49s. 11d. cash. The foreign and coastwise shipments last week were 12,451 tons, against 9905 tons for the same week of last year, or an increase of 2546 tons, and which now makes the total shipments for the whole of this year 474,112 tons, against 571,797 tons for the same time of 1880, and 475,038 tons in 1879. The number of furnaces in blast remains at 105, and the total stock now in Messrs. Connell and Co.'s stores amounts to 605,091 tons, against 600,457 tons last week, or an increase of 4634 tons. The imports of Middlesbrough pig-iron into Grangemouth last week were 3930 tons, against 10,258 tons for the same week of last year, being a decrease of 6328 tons, and which leaves a total increase for the whole of this year compared with last of 36,201 tons. The Cleveland market is reported quiet, and prices perceptibly lower. The general quotation for No. 3 is 41s. to 41s. 3d., and for No. 4, 40s. to 40s. 3d., buyers offering only the lower price, at which there has been business done. The fall in price may be attributed to the reduced rates upon the Scotch market at the early part of the week, as also to the limited shipments, those last week being under 12,000 tons. For warrants the demand is quiet, the general quotation being 41s. for No. 3. The stock in public stores is said to have diminished by 442 tons, and now amounts to 181,240 tons.

There is still a steady demand for manufactured plates offering at 67. 10s., and bars and angles at 67. per ton. Upon the Wolverhampton market the demand is said to have assumed a quieter aspect, but prices nearly all round are still well sustained, sellers generally being firm. In sheets there is a fair business doing, at 67. to 67. 10s. for singles, and an active enquiry exists for common bars at 67. 10s. to 67. 15s. However, as to the limited business in general, there is no much business doing, buyers having for the time being satisfied their wants. Nevertheless, sellers are still very strong in their quotations, having plenty of work in hand for their various mills. In pigs, however, owing to a somewhat curtailed supply, and the continuance of a good demand, prices are quoted rather higher, and the present figure asked for Northampton qualities is 52s. 6d., Derbyshire being quoted at 55s., and common Staffordshire at 45s. The Sheffield trade is still said to be characterised by firmness; and, in spite of the advanced prices of the past few weeks, orders continue to come forward freely. There is a good demand for all classes of merchant iron, while business in general railway material keeps brisk. From Wales there is nothing fresh to have to report, a moderate demand existing for rails, chiefly for America, other descriptions being also in fair request, while prices remain unchanged. Advances from New York of the 24th inst. report a good business in all descriptions, while prices display an upward tendency. No. 1 Galtsherrrie and Glengarnock both rule at 82s. Coltness is quoted at 82s. 50; Ellington at 82s. 50. Scrap continues to be quoted at 28s. 50, but old rails have advanced 10s., and are now offered at 30s. Hematite pigs rule at 82s., while Cleveland pigs show a rise of 4s., and are now quoted at 82l.

TIN.—This market has been rather unsteady, and business has been done at various prices; but, on the whole, the market may be said to have assumed a somewhat easier tendency. Many operators may be rather reluctant to pay the present enhanced prices, and this not without reasonable cause; for leaving entirely out of the question whether the state of the market justifies the rise or not, yet there is also the fact that prices have advanced to their present figure almost without any reaction for several weeks past, which would necessarily fail to make a slight fall now a matter of any surprise. The chief point, however, which is likely to influence future prices, and to which attention should be given, is to discover whether the recent large business has resulted in leaving the stocks in the hands of only a selected few strong holders, or whether the tin has become circulated in numerous hands and may be thrown upon the market at any time. But, yet, be this as it may, it is worthy of note that the high prices have not prevented consumers continuing to make large purchases, which is easily testified by the large deliveries as given in several of the last statistics. Business for legitimate account is unquestionably good; and as consumers do not for the most part lay up private stocks, while also many of the tin-plate works are said to hold sufficient orders to keep their works going for a long time hence, it does seem probable that the consumptive demand for tin will continue good for some time to come.

SPELT.—A large demand exists for this article at advancing prices. Stocks have been worked off everywhere, and consumption for some time past has exceeded production. Should this continue much higher prices must rule. The quotation to-day is 177. 5s. to 177. 10s. for ordinaries.

LEAD.—There is but a very moderate business doing in this metal, and prices on the whole have tended in buyers' favour. It has yet to be seen whether the slightly reduced rates will be sufficient to stimulate business, or whether still further concessions will be necessary to create a revival in the demand.

STEEL.—This market is in all respects without alteration. Prices show no change, and the demand appears to be fully sustained, most of the works being reported very briskly occupied with the orders in hand.

TIN-PLATES.—A steady business is doing, and as enquiries keep fairly numerous sellers are, perhaps, a shade stiffer in their quotations, although on the whole there appears little difficulty in placing orders at previous rates.

QUICKSILVER.—The importers of Spanish hold firmly for 77., whilst numerous sales from second hands have been made at 67. 15s. The export enquiry continues good.

THE MINING SHARE MARKET has been more than usually dull this week, and the dealers chiefly occupied on the settlement of the fortnightly account. Large speculative purchases, particularly of tin shares, were made in anticipation of the rise in the price of tin; and now at each settlement the markets are affected and prices drop, either on pressed sales or on "making up" differences.

TIN.—There has been no advance in the standards for ore since September, and the business doing in shares has been very fluctuating and uncertain. For the most part prices are nominal. Blue Hills, 2½ to 3; Cook's Kitchen, 24 to 25; Carn Brea, 27½ to 28½. Dolcoaths have fluctuated and leave off 86 to 88. East Lovel, 24 to 25. East Pool have declined, not, we understand, from any falling off in the mine, but from a very large number of shares having been sold at the advanced price—they leave off 42 to 43; Killfret, 1½ to 1½; Mount Carbis, 2½ to 3½; North Penstruthal, 15s. to 20s. Polrose, ½ to ¾; the report here looks more promising.

South Condurrow, 10 to 11; South Crofty, 10 to 10½; South Frances, 16 to 17; Tincroft, 18½ to 19½; West Basset, 12 to 13; West Godolphin, 13 to 14; West Frances, 18 to 19; New Kitty, 1½ to 2½; West Kitty, 8½ to 9½; West Peavor, 13 to 14; West Phoenix, 1½ to 1½; Wheal Agar, 14 to 14½; Wheal Basset, 5 to 5½; Wheal Grenville, 11½ to 12; Wheal Jane, 1½ to 1½; Wheal Jewell, ½ to ¾; Wheal Kitty (St. Agnes), 1½ to 2; Wheal Peavor have been unsaleable, and leave off 12 to 13; Wheal Uny, 3½ to 3½; East Blue Hills, 10s. to 15s.; North Busy—at the meeting a call of 6s. per share was made. Wheal Sisters—at the meeting the accounts showed

a loss on five months working of 9067., and debit balance of 18387.; 36 shares were relinquished, and a call of 5s. per share made. The tin sold, 134 tons, realised 73667., or about 547. 10s. a ton. Goodvevere, 1½ to 1½; Drake Walls, ½ to ¾; Kit Hill, ½ to ¾; Devon United, ½ to 1½.

COPPER has advanced, and is likely to rise still more, but there is not much business doing in copper shares, and prices are nominal. Bedford United, 1½ to 1½; Carnarvon Copper, ½ to ¾; Devon Great Consols, 7½ to 8½; South Devon United, 1½ to 1½; East Caradon, 1½ to 1½; Gawton, ½ to 1; Gunnislake (Clitters), 3 to 3½; Mellanear, 4 to 4½; Marke Valley, 1½ to 1½; Morfa Du, ½ to ¾; the sale of copper ore (70 tons) realised 1247. 5s. Mona Consols, 1 to 1½; New Cook's Kitchen, 5½ to 6; New West Caradon, 9s. to 11s.; Prince of Wales, ½ to ¾; this mine samples 72 tons of good copper ores next week. South Caradon, 50 to 55; West Caradon, ½ to 1; West Crebor, 7s. to 9s.; West Seton, 14 to 16; Wheal Crebor, 3 to 3½. West Tolgus shares have improved to 15, 20; the 105 end is expected to be nearing a shoot of ore.

Devon Friendship, 1 to 1½; the large pumping-wheel was set to work last Saturday, and the water is already down 12 fms. under adit, and the 30 is likely to be reached within a fortnight. The adit end is worth 6 tons of arsenical mudie per fathom, one stoep 10 tons, and three others 3 tons. The quantity of tin sold this week was 4 tons, at 567. 10s. per ton. Sortridge, 1 to 1½; South Penstruthal, ½ to ¾; South Crebor, ½ to ¾. Parys Copper, ½ to ¾; the sale of ore this week realised 9407. 10s.; 60 tons of copper precipitate brought 87. 15s. per ton; 60 tons of ore, 27. 18s. 6d.; and 160 tons, 17. 10s. per ton.

LEAD mines have been very quiet, and quotations are merely nominal. Van, 9 to 10; the 120 west continues to improve, and is worth 2 tons of lead ore per fathom. Great Laxey are quoted lower at 17½ to 18½. Roman Gravels, 12 to 13; the ore sold—150 tons—realised 14657. Tankerville Consols, 9s. to 10s.; at Pennerley the lode looks well, and is productive at several places, and at Bog a discovery is looked for. Denbighshire, 2 to 2½; Derwent, ½ to 1, East Craven Moor, ½ to ¾; East Chiverton, 1½ to 1½; Glenroy, ½ to 1; South Darren, 1½ to 1½; the 120 east is worth 1½ to 2 tons of rich silver-lead ore per fathom. The 120 west is improving, getting under the rich ore ground above, and the 110 west is worth 2 tons. East Roman Gravels, 17s. 6d. to 20s.; the 109 north is worth from 3 to 4 tons of lead ore per fathom, the 97 south 1½ ton; the sample for the month is 40 tons.

Northern Lead, 17s. 6d. to 20s.; the water is out 11 fms. at Brandon Walls. At Stetsfield Burn the stoeps are looking better. The sale this week (20 tons) realised 87. 17s. 6d. per ton. Pandora, ½ to ¾; the report shows the mine to be looking well. Goddard's Lead, 1 to 1½. Frogoch, 2½ to 3½; this mine has sold 100 tons of blende, at 37. 0s. 6d. per ton, and 50 tons at 27. 12s. per ton. Great Holway, 5 to 5½; the returns this month, it is said, will exceed 10007. West Holway, 35s. to 40s.; Crosswood, ½ to 1½; Grogwinon, 2 to 3; North Grogwinon, 1 to 1½; Red Rock, 1 to 2; New Wye Valley, ½ to 1½; Ystwith, ½ to ¾; Herodsfoot, ½ to ¾; Leadhills, 1½ to 2; North D Eresby, 1 to 1½; North Herodsfoot, ½ to ¾; Pen-yr-Orsedd, 1 to 1½; Tamar, 1 to 1½.

FOREIGN MINES.—Arendal, 2½ to 3; the 60 at Skytmur has improved. The cross-cut to the new lode is expected to reach it in three or four months, and is considered an important point. Brazilian Gold, 1 to 1½; Birdseye Creek, 1½ to 1½; Cape Copper, 44 to 46; Colorado, 2½ to 2½; Chile, ½ to ¾; Devala Central, ½ to ¾; Devala-Moyar, 1 to 1½; Hoover Hill, ½ to ¾; Indian Phoenix, ½ to 1; Indian Trevelyan, ½ to 1; Mysore, 1½ to 1½; Potosi, ½ to ¾; Rhodes Reef, ½ to ¾; Santa Cruz, ½ to ¾; South-East Wynad, 1½ to 1½; South Indian, 1½ to 1½; Tumbacherry, ½ to 1½; Wynad Perseverance, ½ to ¾; Copiapo, 2½ to 3; Don Pedro, 5s. to 10s.; Eberhardt, ½ to ¾; English-Australian, ½ to 1½; Frontino and Bolivia, ¾ to ¾; Indian Glenrock, 1½ to 1½; Gold Hill, 1 to 1½; New Quebrada, ½ to ¾. Kapanga, ½ to ¾; a telegram received this week announces that Seedy's lode is not yet out through, and continues to show gold. Michipicoten, 1½ to 1½; the operations here are said to be progressing well. Yuba River, par to ½ prem.; the new tunnel is in nearly 1100 feet, and the men have commenced to repair the shaft, which it is expected will be completed this month. Emma, 2½ to 3; Nouveau Monde, ½ to ¾; Panulcillo, 5 to 5½; Port Phillip, 4s. to 6s.; Richmond, 15 to 15½; Ruby, 3½ to 4½; Hornachos, 6 to 7.

The Market for Mine Shares on the Stock Exchange has been considerably less active during the week, and prices generally are lower, owing in part to holders having shown great inclination to take advantage of the improved feeling manifest, and in part to the less satisfactory condition of the metal markets; yet there are many who are very sanguine that the present dullness is merely temporary; that the trade of the country is gradually improving, and that as progress is made in this direction there is no doubt that a great advance in lead, copper, and tin will be the result, and must of necessity be the means of greatly and favourably affecting all home mines, especially those selling large quantities of mineral.

In Indian Gold Mine shares there has been a fair amount of business done, although there is an absence of anything like activity. The directors of the Mysore Reefs Company have received advices from Mr. Moon, the company's manager in India, under date Sept. 23, 24, and 26th ult., and Oct. 1 and 3, in which he states that he is making good progress with the works, that he finds the native labour both cheap, plentiful and, under proper superintendence, efficient; that he has found on the eastern boundary of the company's property a considerable quantity of what the natives term "wash dirt," which on his washing it showed specks of visible gold. (A sample accompanies the letter, in which under a magnifying glass the specks of gold are very numerous.) He adds that in getting out the foundations for a dam wall which he is constructing his attention was drawn to some decomposed quartz exactly like what he used to get in Australia, with which he states he felt as much cheered as he could be short of seeing a nugget. All this stuff is being carefully stacked in order to pass it through the stamps when they are ready. Mr. Moon further states that although he is many months, in some cases over a year, behind the neighbouring companies in beginning, unless he greatly overrates his abilities he will not be later than second, if not first, in continuous crushing. A sample of quartz taken from one of the company's reefs (that marked "A" in Mr. St. Stephen's plan) is on its way to England and will probably arrive within the next week. This will be assayed, and the results communicated to the shareholders.

Since the above advices were received Mr. Moon has telegraphed for more stamps, and that during the week preceding his telegram he had got out 100 tons of stone.

The Isabelle Gold and Silver Mining Company, with a capital of 150,0007. in shares of 17. each, and which has been in operation for several years driving a mining tunnel in California, has issued a prospectus, which will be found in another column, for placing 25,0007. shares. The directors intimate that according to advices from their manager he is engaged hauling pay ore from the mines of this company to the Eschequer Company's mill for immediate reduction into bullion. Assays of ore made by Messrs. Lewis Chalmers, A. E. Arnold, F. Claudet, and Johnson and Matthey, show from 1 oz. to 1¼ oz. of gold; from 57½ oz. to 102 oz. of silver to the ton of 20 cwt., and from 18½ per cent. to 40 per cent. of copper. The manager states that the copper alone will more than cover all expenses, leaving the precious metals (18. 1½ per cent.) net profit. The directors draw attention to the fact that the gold and silver lodes of the Isabelle Company have not even yet been tapped. Those of the I.X.L. Gold and Silver Mining Company, and those of the Eschequer Gold and Silver Mining Company being at a greater distance from the mouth of the Isabelle Tunnel of course remains undeveloped pending its completion. It is, however, estimated that the vertical of these main Isabelle lodes will be intersected by the tunnel within 830 and 1130 ft. respectively from the present face at a depth of 1200 ft., the I.X.L. lodes about 318 ft., at a depth of 1400 ft., and the Eschequer lodes 3700 ft., at a depth of 1600 ft. At these depths very important and profitable results are expected from all these gold and silver mines within a reasonable time.

Newton, Chambers, and Company has been converted into a limited company, with a capital of 650,0007., in shares of 207. each. The vendors—Messrs. Thomas Chambers Newton, Samuel Owen, George Dawson, Arthur Ingram Robinson, Arthur Marshall Chambers, and Matthew Henry Habershon—are to receive. The business was founded in 1793, and since 1869 has been carried on by the executors of the deceased partners. The chief collieries are the Thorncliffe, Tankersley, and Rockingham, and it is estimated that the coal is worth 25,000,0007. an readily increased by taking additional royalties to 25,000,0007. The iron-works consist of the Thorncliffe and the Chapeltown Works, including two large blast-furnaces of the best modern construction, which yield annually 31,000 tons

Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

Received.—"R. L. F." (Reno, Nevada).—"Shareholder" (Great Zarnuma Gold).—"G. R. S." (Banbury).—"M. R."—"P. M." (Turo).—"H. A."—"Old Hand."—"M. G." (Limerick).—"Mentor."—"Shareholder" (Manchester). The matters referred to in your letter are being enquired into.—"C. S."—"J. C."—"W. G." (Torquay).—"Old Reader."—"Stannum" (Liverpool) should write to the parties who advised him to purchase the shares.—"J. D." (Sunderland): We do not know. Enquire of the secretaries of the societies before which the papers were read.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, OCTOBER 29, 1881.

THE MINERS' NATIONAL CONFERENCE.

WAGES V. THE SLIDING SCALE.

The Miners' Conference at Birmingham was brought to a close on Friday evening last, and the business done and resolutions come to were more of a suggestive than of a practical character. The principal question discussed was the sliding scale for the regulation of wages, and, as we stated last week, was likely to be the case, the idea of obtaining the price of coal in what Mr. CRAWFORD terms "the open market" was thrown overboard, or scarcely alluded to. As we then pointed out, the mineowners' books are the only reliable data to go upon for the purpose of ascertaining the price of coal or other mineral; and the difficulty of finding a better medium was admitted in the address sent to the Conference by Mr. MACDONALD, who had been requested to frame a "model scale," but he states that he had attempted the task more than once, only with "the conviction that he could not fulfil the obligation." A fair sliding scale cannot well be a one-sided one, and to satisfy the requirements of the representatives of the miners it would have to be, judging from the discussion that took place at the Conference. The scale instead of being evenly balanced would have to be at extremes, and even then there would be dissatisfaction, for Mr. MACDONALD derides the idea that the interests of capital and labour are identical, so that any agreement entered into by masters must be taken as in furtherance of their own interests, without the least consideration for those of the persons they employ. Still, with a knowledge of what arbitration has effected, Mr. MACDONALD says that "the sliding scale was the best form they had yet attained." The Member for Stafford, however, does not allude in any way as to the means for obtaining the price at which coal or iron are sold, and with us, no doubt, he sees that the office books, which are good evidence in all our law courts, contain the only reliable data as to the charges made by mineowners, and on which a sliding scale can be based. But although the Conference was ostensibly called for the purpose of considering the sliding scale as the basis for fixing the wages of miners, other matters of considerably more importance formed the staple of the arguments of the delegates, and these went so far as to question the right of owners of mines to enter into contracts with their customers as to forward deliveries, and this was put forward in somewhat offensive terms. The resolution on the subject was that "there can be no prospect of the workmen receiving any advance of wages in proportion to the natural rise of markets so long as the employers are allowed to make contracts for the length of time they now arrange them, and therefore we recommend that no coal or iron sold beyond the time over which the accountant's examination extends shall be taken into the calculations whereby wages are regulated." The threat here is rather suggestive, for it is not stated how the owners of mines are to be prevented from making contracts as they have hitherto done, and whether they will submit all their business transactions for the approval of their workpeople, who, we gather from the resolution, are to "allow," or otherwise, their employers to enter into contracts. This is something new, and we are not aware of such a bold assertion as to the right of labour to regulate the action of capitalists and employers ever having been made before. But it would appear as if the concessions made by mineowners to their workmen in their desire to cultivate a friendly feeling has not been appreciated, but has emboldened some of the leaders to go further in their demands than they had ever done before. They are not content with taking the figures of the accountants appointed by the men as to the selling price of coal, iron, &c., but they now require that the miner shall have the right to demand information from the accountants as to their mode of arriving at an average standard of price. The delegates would thus question the honour of the persons actually employed by and in the interest of the miners, so that we believe few accountants of position would care to work under such circumstances for a body that doubted the *bona fides* of those it employed. We have, however, a much higher opinion of the working miners of the country than their delegates, who have long since ceased all connection with mines as working men for far easier, pleasanter, and better paid duties.

In future sliding scales an important addition is proposed to be made, so that wages shall be increased without any increase being made in the price of coal or iron. This is embodied in a resolution to the effect that all sliding scales should contain a clause or clauses embodying the principle that whenever there has been an increase in outputs, with normal condition of things, wages should receive a proportionate advance on previous rates whether the average standard price is higher or lower. This of course would give all the advantage to the workmen, and would do away altogether with a sliding scale based on the price of the produce of mines, as exists at the present time. Were such an agreement made mineowners might be losing money by their outputs, so it would suit them better to have their pits going three or four days a week instead of five or six. The consequence would be that the men would be worse off in endeavouring to force up wages when the output of coal could be increased without any addition to the price being made. It also happens that when coal is at a very low price the demand is the heaviest, so that in such a case the men would expect higher wages when employers were making little or no profits. This would be another means of doing away with the sliding scale based on the rise and fall in the price of coal, iron, &c. This proposition was still further enforced in another resolution passed by the Conference, which was—"That each district in getting out sliding scales should obtain the insertion of a minimum clause to prevent wages being reduced to a starvation point, as at present, in the face of an increased demand for coal, so as to prevent employers reducing coal to a certain point." Nothing, of course, is said as to fixing a maximum at which wages shall go no higher, everything being for the other side of the question, and in the interest of the workmen. Colliery owners, as a rule do not voluntarily reduce the price of coal, as the resolution would lead one to believe, but get as much as ever they can for what they have to sell, the same as vendors of any other material. Now the men in different districts can prevent mineowners selling at a price ruled by the market it is difficult to conceive. From a workman's standpoint the resolutions are of a most roscate character, but how they are to be practically carried out is a very different thing. The delegates have certainly pointed out how the miners could be benefited, but they have not taken into consideration the fact that there are generally two parties to an agreement. The mineowners have faithfully carried out the arrangements made for the adoption of a sliding scale, and they cannot well be expected to fall into the extreme and impracticable views of those who took part in the Conference at Birmingham. The latter, too, knew perfectly well that their proposals could not be sanctioned by the employers, so that the resolutions were meant for the delectation of the workmen only.

Independent, however, of the sliding scale, the general question of an advance of wages all round was discussed, and a resolution was agreed to recommending that a national conference should be held

in December to consider the advisability of asking for general advance of wages, and also with a view of arranging interviews with employers for the purpose of asking them to advance coal sufficiently high to give an advance of wages. We are not aware that employers have the power to advance the price of coal on being requested to do so; for we believe they would be very glad to raise it without being asked by miners or anyone else. But the price of coal cannot be fixed by the producer, for were even a few to attempt to do so they would find their coal on their hands, for there would be no market for it. All that can be done in that direction is to wait until the consumption of fuel is nearly equal to the production, and the prices would of necessity go up, but at present masters and workmen are alike powerless in advancing the price of coal, which is entirely out of their reach. The men may have interviews with their employers, but they will be entirely useless for effecting the intended object, and this they will be easily made to understand. Colliery owners are fully alive to their own interests, and do not require any outside incentive in prompting them to get as much as ever they can for what they have to sell. We do not blame miners for endeavouring to obtain higher remuneration for their labour than they are now receiving, but we do regret that expectations should be held out to them by their representatives that it is impossible to realise. The sliding scale has been the great object sought for in the interests of the workmen, and that being conceded it should be accepted in its integrity, and credit given to the employers for carrying it out faithfully so far as they are concerned, whilst the men should also carry it out in a fair and not in a carping and dissatisfied spirit.

COAL IN QUEENSLAND.

An interesting address was recently delivered at Bundaberg by the Rev. J. TENISON WOODS, on the coal deposits of the Wide Bay and Burnett districts. When Sir CHARLES DILKE visited the Antipodes some years since he expressed his opinion that New South Wales was destined to be the Australian Colony, *par excellence*, of the future, because it possessed such abundance of coal wealth. But if the observations made at Bundaberg by Mr. WOODS possess the merit of substantial reliability—that is, if he is a competent judge in such matters—Queensland possesses large stores of coal as well as New South Wales. Mr. WOODS stated that when he visited the Burroughs he was surprised that such large deposits of coal of such excellent quality should have remained such a long time without any effort being made to utilise it. The fact is, as Mr. WOODS must be aware everything in a new colony has to be collected, and their collection is a work of considerable time. Moreover it is necessary that there should be a demand for any new commodity in order to ensure its production, and the scantiness of population which has hitherto prevailed in Queensland has been just as fatal to the consumption of coal as it has been to its production. In Maryborough, a rising Queensland town, there is expected to be a large market for coal in consequence of the place being lighted with gas, in consequence of the number of steamers calling at it, and in consequence of the construction of a railway to Gympie. Mr. WOODS expressed his conviction that similar results would be witnessed at Bundaberg, small as that place at present was. The railway to Mount Perry, he also observed would consume a great deal of coal. Navigation would also be improved at Brisbane, and then Queensland coal, Mr. WOODS thought, would come into request as much as coal in any other part of Australia. Indeed Mr. WOODS considered that there would be a greater demand for Queensland coal than for coal from the other Australian colonies, as the geographical position of Queensland was more favoured for vessels wanting to ship coal for India. The coal deposits to which Mr. WOODS especially directed attention are about 13 miles from Bundaberg in a straight line, perfectly available for railway purposes. Mr. WOODS also remarked upon the great quantity of gas contained in the coal which he had examined.

In the course of his lecture Mr. WOODS exhibited a piece of coal which he had taken from some of the seams which he had inspected. He said it was a good solid specimen of coal equal to anything which he had seen at Newcastle, New South Wales, while the deposit from which it was taken was not so valuable as some of the Queensland seams. We can but repeat that if Queensland really possesses all the coal wealth which Mr. WOODS attributes to it the fact must exert a very important influence upon its future. Not only will Queensland coal enable Queensland railways to be worked more cheaply, but an impulse will be given to Queensland steam navigation, and to industries of every description in connection with which steam is employed as a motive power. Hitherto the chief pursuits of the colonists have been gold mining, sheep farming, and sugar growing. The first must be regarded as a precarious industry—if indeed it can be classed as an industry at all. The second has undoubtedly been a source of great wealth, but it is well for a colony to have two strings to its bow. The third has not attained any very general importance at present. Upon the whole, coal is just what Queensland requires to stimulate its progress and to ensure it more solid and general prosperity.

MINING EXPLOSION SURPLUS FUNDS.

It is not often that appeals to the public in aid of the distressed are followed by subscriptions greatly in excess of what is required, but in the case of explosions in mines resulting in a heavy loss of life there have been exceptions to the rule. The consequence is that those who have been entrusted with such monies at times find embarrassment in disposing of the surpluses after all legitimate claims are met. At Hartley the public subscribed about 80,000*l.*, and they left a large surplus, a portion of which was sent into other mining districts. On the occasion of the Oaks explosion in 1866 the trustees of the Hartley fund sent 2040*l.*, but this sum was not applied in the augmentation of the Oaks Explosion Fund but was invested in the names of trustees as the nucleus of a permanent colliery accident fund for the district. In the case of the Oaks explosion the public sent direct to the Barnsley committee upwards of 36,000*l.*, whilst a large sum was received by the Lord Mayor of London at the Mansion House. It was estimated by Mr. PATRISON, the well-known actuary, that the sum required to pay the widows 5*s.* a week and the children about a fourth of that amount would be 49,860*l.* These figures were submitted to the Mansion House Committee, who handed the sum of 11,697*l.* to the Barnsley committee, so that the total received from all sources was 48,747*l.* Originally there were 690 persons to be supported, but the number rapidly decreased, 88 of the widows having re-married within five years after the explosion. There were 339 children, and as the boys had to go off the fund on their attaining the age of 12 and girls 13 years all of these are now independent of the fund, so that there are only a few widows still to be supported. Such being the case the committee, notwithstanding the calculations of Mr. PATRISON, have a surplus after providing for all claims of from 12,000*l.* to 15,000*l.* The time, it is considered by many persons, has arrived when the committee at Barnsley should make known what it purposes doing with the large surplus they have in hand. It has been suggested that the money might appropriately be given to the General Fund of Confederated Miners Associations, formed for the purposes of aiding local associations in the case of explosions resulting in the loss of life, so that appeals to the public should not be required. But the local committee have made it known that the money will not leave the district, although a great deal of it was given by persons not residing in Yorkshire. It is felt that so much money should not be left in the hands of a few persons, whose deaths would in all probability be the means of keeping it locked up, and, therefore, entirely useless.

This was the case in one instance that we recollect, and it was in connection with a previous fatal explosion at the Oaks Colliery. A large sum of money was subscribed for the sufferers, and placed in the hands of trustees. After all the claims were met a considerable surplus was left. Ultimately all the trustees, with one exception, died, and for several years the survivor subscribed from the fund which was thus left at his sole disposal to the Buxton and other charities, and in doing so was able to send poor persons to take the benefits of the baths and waters. This was all very well so far as it went, but the money was certainly not given for such a purpose. The question, however, to

which we wished to call attention relates to the disposal of the surplus of the Oaks Fund of 1866. It is evidently not required by the local Permanent Miners' Relief Association, which has a large accumulated fund capable of meeting almost any demand that may be made upon it. There are two ways in which the money might be advantageously laid out, and in a way that could not fail to satisfy the great body of subscribers. The establishment of almshouses for aged and deserving miners, or those who have been incapacitated from following their employment owing to injuries received in mines, has not received that attention which such a praiseworthy object deserves. But we believe were a start made in any one district it would be quickly followed in others, and we do know that the mineowners would liberally subscribe to such charities, whilst it is not too much to say that bequests would follow in due course. Or a mining school, much required in the South Yorkshire district, might be established with the greatest benefit, seeing that the locality has within it the most fiery mines in the kingdom. However, we think the time has arrived when the Barnsley committee should let the subscribers to the Oaks Fund know what they intend doing with the large surplus in hand, which should not be allowed to rest until it is forgotten, and useless for all beneficial and philanthropic purposes.

SPELTER AND ITS FUTURE PROSPECTS.

The quantity of blende now being annually raised from the mines of Wales and Cornwall is now so large that to many mining companies the prices of spelter and zinc are of almost greater importance to the adventurers than those of copper and lead; and they may certainly be congratulated that at the present time the prospect is particularly cheering. It is well known that for various purposes the use of spelter has vastly increased during the past two years, yet the price has been steadily dropping, in spite of the most vigorous and powerful efforts to push it in the opposite direction, and there maintain it. Early last year a syndicate of producers and their agents was formed in Silesia, Hamburg, on the Rhine, and in England. At first the combination promised well, as it was formed at a time when wild speculation was generally successful; but when in March, 1880, the speculative mania suddenly subsided, spelter declined with the other metals, without showing periods of buoyancy and recovery, as the others sometimes did. If the producers had reason to complain on that score, they had at least the satisfaction of observing that consumption was showing a steady increase, stimulated as it was by moderate prices. The impression began to prevail among close observers in the metal trade that consumption was likely to outrun production, and that in the near future spelter would rebound of its own strength, without the necessity of a syndicate to assist it in doing so. This opinion was freely expressed in Europe during the last quarter of 1880. When, later on, the activity of the zinc works in England became known from official data, these favourable impressions were weakened somewhat, for it was perceived that England had worked an enormous amount of foreign ores, and consequently drew less upon the continental supply of slab metal.

The home production of zinc ore during last year, as will have been seen from the official statistics recently published in the *Mining Journal*, was 27,548 tons, from which 7162 tons of metallic zinc were made. Besides this 43,177 tons of ore were imported, Italy sending 11,028 tons, Greece 11,485 tons, and Algeria 17,578 tons, the balance all coming, we presume, from the North of Spain. The import of crude spelter was 33,301 tons, 13,480 tons coming from Germany, 7993 tons from Holland in transit, and 9402 from Belgium. Besides this 16,677 tons of manufactures were received, Germany contributing 3797 tons, Holland in transit 6678 tons, and Belgium 5007 tons. The export of spelter and manufactures was 12,237 tons, of which British India took 7640 tons. Estimating the yield of slab metal from foreign imported ore at the same figure as the domestic British, we find a production of 11,225 tons of metallic zinc, and adding the import of spelter and its manufactures, we find the total obtained from abroad to have been 62,203 tons, of which 12,237 were re-exported. The French and Spanish statistics are equally gratifying, both showing the trade to be sound and steady. The Silesian output of metallic zinc has of late years increased at the rate of about 10 per cent. annually, say some 10,000 tons a year, which cannot be called a very rapid increase; but that portion of Prussia was in the habit of largely exporting sheet zinc to Russia, which export has been interfered with since the latter country raised the duty, chiefly for the protection of the Polish production, for Poland near the Prussian frontier has its own mines and is rearing a home industry. Poland now produces between 4000 and 6000 tons of spelter annually, but under protection this output may soon be doubled.

The consumption of spelter for galvanising purposes has experienced quite a development both in Europe and this country. Advances from Rhenish Westphalia dwell upon this feature in the iron trade, especially so far as hollow-ware is concerned, and the same observation is made in the United States, in England, and Austria. Brass making has been unusually active on both sides of the Atlantic for more than 18 months past, but consumption seems to be fully up to production in this line, and the amount of spelter absorbed at present in both hemispheres for the many uses it is turned to must be something extraordinary. In the United States the prospect is particularly bright, and the slight upward movement which has commenced will, it is confidently believed, continue. A sound American authority upon the subject remarks that throughout the first nine months of the year spelter was very low, and fluctuated but little. It has been, so to speak, the black sheep of the metal trade, attracting in our opinion less attention than it should have done, for it was an open secret that our Western output has all along been labouring under difficulties. It is now revealed that the supply from there will not suffice for our growing wants in the immediate future, causing the metal to rise in value without any speculator having deigned to take notice of it. If, then, we are compelled to import once more on an extensive scale holders in Europe, so easily influenced by any impulse from here, will take courage, and a syndicate on the other side may have greater chance of success than it had in January, 1880.

SCIENCE AND INDUSTRY.

On the occasion of opening the new buildings constructed in extension of the Birmingham and Midland Institute, at a cost of 30,000*l.*, a few days ago, Dr. Siemens delivered the inaugural address, taking for his subject, "Science and Industry," and the place and the man were alike well adapted in connection with such a discourse. As might be expected, a comparison was made by the speaker as to technical education at home and abroad, and Dr. Siemens remarked that in some respects continental nations had stolen a march upon us in providing for the education of the young engineer, the architect, the manufacturer, and the craftsman. The young polytechnic student was apt to be a dogmatist, capable of coming out first-class in competitive examinations, and likely to make a good official in a Government administration; but most unlikely to venture on such new embodiments of first principles of nature as were essential to the accomplishment of improved results, such as had animated our Watts, our Cromptons, and our Bessemer. From this, it may be implied, we suppose, that we are excellent imitators, but not good founders or creators; we can carry out old ideas, but cannot originate new ones, and in this latter respect we were more behind our continental neighbours. This is certainly a reproach which we think is correct, but is fast giving way before the education now being given at some recently established colleges and training schools, where mining, geology, and engineering are now taught in the most practical manner. Dr. Siemens tells us that on the Continent, where the governments themselves were largely engaged in trade and enterprise, where mines, railways, and factories were State establishments, it was necessary to create a large staff of men educated to the point of being able to assume at once a position of some authority in the ranks of rigid authority or organisation, and such men were provided by the polytechnic schools. Dr. Siemens did not agree with the oft quoted remark that "a little learning is a dangerous thing," for in physical science a little knowledge might be of the greatest importance to an artisan when he was called upon to set a machine in operation which was stopped by some accidental cause. He did not regard an education complete that did not com-

bine literary with scientific training—the one gave the polish and the other the fibre and the practical direction to the understanding. Scientific teaching to be beneficial should be practical, and no school should be without its chemical, physical, and mechanical laboratories, where students could test for themselves chemical reactions, verify physical laws, and ascertain the mechanical properties of materials used in construction. There are simple truths we consider should be carried out in all our schools where scientific knowledge forms a leading portion of the curriculum there, especially at those establishments where prominence is given to mining and engineering pursuits. Great changes have taken place of late years in imparting scientific instruction, and these must still keep moving forward if we are to maintain our position as the greatest manufacturing power that exists. Much has also to be learnt as regards mining, which should be looked upon as a science of the greatest importance, seeing that it is one in which much has yet to be learnt even by the ablest of its professors, and we certainly agree with Dr. Siemens when he says that changes threatened to invade almost every branch of industry, and it was necessary for all to be prepared for such changes; and the practical man of former days would have to yield his place to the unbiased worker who, with open mind, was prepared for every forward step as it arose. Scientific knowledge, even in the hands of practical men, we may truly say has now become a necessity for those who desire to be in the van either as regards mining or manufacturing pursuits.

COAL AND THE FUTURE.

As to the great ability of Prof. Sam. Haughton, of Trinity College, Dublin, no doubt will exist in the mind of any reader of the *Mining Journal*, but the most learned sometimes err, and Dr. Sam. Haughton certainly seems to have done so in the lecture on Irish Manufactures recently delivered by him before the Working Men's Club. In the course of his remarks he observed that it was a popular fallacy to suppose that Ireland was as well off as other countries with respect to coal. On the contrary, she was terribly handicapped in the manufacturing race by her want of coal. He had calculated that the burning of a ton of coal when used for steam-engines in manufactures was equivalent to the labouring force of 10 men, women, and children for a whole year. England, Scotland, and Wales were at present producing 100,000,000 tons of coal per annum. The greater part of that was burned for the purpose of manufacture; therefore the 100,000,000 tons represented the annual labours of 1,000,000,000 of men, women, and children, which was nearly the whole population of the earth. Three-fourths of all the coal of Europe and Asia happened by mere accident to be stored up under the feet of English, Scotch, and Welshmen, while Irishmen were left in the cold. They might find some comfort in the reflection that there were lying untouched under the soil of the United States of America 30 times as much coal as England and Scotland had. It was not unpatriotic for him, as an Irishman and an English subject, to say that in a not far distant future the sceptre of the world would pass quietly and without bloodshed from the country that had coal to that country that had 30 times as much coal.

Now, as a matter of fact the enormous coal fields of the United States are altogether unlikely to give to the trans-Atlantic Republic the command of the world's commerce and industry, as Professor Haughton will readily admit when his attention is drawn to a very simple truth. It was pointed out long since by Prof. John Morris, of University College, London, that it was not the actual acreage of coal field that can give a nation the control of the world's commerce but the proportion which the coal field bears to the surface area of the country, and he showed that although the United States coal fields were considerably larger in acreage than those of Great Britain, it was the fact that in Great Britain the coal area was larger in proportion to the surface area that had always given her supremacy. Large as is the area of the coal fields of the United States, they will prove insufficient to do more than provide for the pressing wants of her own population. With regard to coal resources, the United States and Germany are in almost parallel positions. As every statement of a man in the position of Prof. Sam. Haughton receives wide consideration, it is essential that accuracy should characterise all he says, especially when addressing working men.

BLAKE'S BRITISH FOSSIL CEPHALOPODA.—The first part now about to be issued is an instalment of the work undertaken by the aid of the Government grant for scientific research, and deals with that group of the cephalopoda that occurs in the Silurian rocks. The "Introduction" gives a resumé of all that is known of the anatomy of the living nautilus, as the type of the group of animals whose fossil shells are here described, followed by an account of the structure of the shell as well as microscopical as general; and, lastly, a discussion of natural classifications of the cephalopods dealt with, giving descriptions of all the genera. The introduction is followed by a copious bibliography of the British Silurian cephalopods, giving a complete record of all that have been described and recorded. The main body of the work consists of detailed descriptions of every species that has been anywhere discovered in British Silurian rocks in the British Isles. For the purposes of the present part of the work alone the author has visited and critically examined the collections in all the large museums in London; also the Woodwardian Museum at Cambridge, the chief collection in Edinburgh, Glasgow, Dublin, Ludlow, Manchester, and Cardiff, as well as the fine private collection of Dr. Grindrod at Malvern, and others of less note, so that no means have been neglected of making the work a complete record of all that can be learnt at the present day on the subject in hand. Much material has also been accumulated for the production of Part II., which will deal with the Devonian and carboniferous cephalopods, the latter being especially important from the fact that this group of shells become highly characteristic during this period. It was originally intended to include these also in Part I.; but in order that each species might be duly illustrated by plates it has been found necessary to limit it to the Silurian. The mass of information thus accumulated and made available for use will afford the means of more accurately determining the fossils of this group and of recognising the position in the series of the rocks in which they occur. This work may be considered to some extent as an extra volume of the *Paleontographical Society*, as it is published uniformly with that series and at the same price, though it has not been thought desirable by the authors to wait for the slower publication in that series, or to crowd out the valuable matter which is still waiting publication by the society.

SMOKE ABATEMENT EXHIBITION.—The honorary secretary (Mr. W. R. E. Coles) appears to be working energetically to make the forthcoming exhibition of smoke appliances at South Kensington a success, and it is gratifying to learn that his efforts have been well responded to by exhibitors. The presidents of the exhibition are the Duke of Albany (Prince Leopold) and the Duke of Westminster, whilst the committee comprises some of the most eminent practical scientists of the day. The exhibition will be held in the east and west arcades, and in the buildings adjoining the Royal Albert Hall at South Kensington. The chief departments will be domestic, industrial, and novelties, Class 1, including varieties of smoke preventing apparatus, fuel, and inventions applicable to existing and new dwelling houses and public buildings; Class 2, comprising similar exhibits applicable to factory and other industrial purposes of all kinds; and Class 3, foreign exhibits, and all descriptions of novel appliances or methods not at present in actual use for smoke abatement, but adaptable to existing chimneys or otherwise, and for obtaining heat with the least possible smoke or other noxious products. Trials will be made upon the exhibits, and gold, silver, and bronze medals and certificates of merit, are to be awarded upon the report of a special committee. The utmost care has been taken to prevent the affair degenerating into a mere advertising medium; it cannot be doubted that the handsome prizes offered will, considering the steps that are to be taken to ensure the awards being fairly made, be accepted by the public as a substantial guarantee that the exhibits which earned them possess intrinsic merit. It was recently announced that Dr. Siemens, a member of

the committee, had offered a prize of 100 guineas to be given for the best method or arrangement "for utilising fuel as a heating agent for domestic and industrial purposes, combining the utmost economy with freedom from smoke and noxious vapours;" for the "Ladies' Prizes" (consisting of two sets of prizes of 50 guineas each) it was stated that there had been received from Mrs. Rathbone 10 guineas, the Baroness Bardett-Counts 10 guineas, Lady Pollock, 2 guineas, to be awarded on trial by experts for the best open grates, and the best kitcheners, combining—1. Freedom from smoke. 2. Simplicity in arrangement and use. 3. Economy. The Society of Arts have also offered a medal to be presented by the special committee, and it is requested that Lord A. Churchill should represent them in reference to this award. The promoters are determined that the exhibition shall not be used merely for advertising purposes, and have refused everything that does not come within the immediate scope of the objects they have in view—the improvement of heating appliances and inventions specially devised to abate smoke. The exhibits will be divided strictly according to their class and description, so that all confusion in arrangement will be avoided. From the circumstance that all classes are interested in the objects of the exhibition the number of visitors will certainly be great, and the general benefit which will result cannot fail to be considerable.

PHOSPHOR BRONZE LININGS FOR SHAFT BEARINGS.—An improved method of and apparatus for lining iron and brass shells with phosphor bronze for shaft bearing, brushes, and other working parts of machinery has been invented by Mr. ALFRED HOWAT, of Manchester. In making steps he casts the iron or brass shell, and in the shell he casts or drills taper holes, the larger ends of the holes being at the outside; he then places in the shell a lining of the shape and thickness required for the phosphor bronze which will form the bearing surface, the shell and lining are placed in the moulding box, which is filled with sand and rammed; the moulding box is then opened, and the shell and lining taken out; the sand is removed from the taper holes in the shell, and the shell is then replaced in the sand; the mould is then dried, after which the box is closed and the phosphor bronze is run into the mould, and it fills the space that was occupied by the lining, and also the taper holes in the shell. The steps thus formed are strong, and solid and much cheaper than steps formed entirely of phosphor bronze. When thick shells are used he drills the taper holes from the inside and not through the shell, the holes being smallest at the opening. Cylinders may be cased or lined in a similar manner. In casing sliding blocks with phosphor bronze he drills or casts taper holes a short distance into the block on each side to be cased, these taper holes being smaller at the outside than inside, and he casts the phosphor bronze as described. He cases plungers by making grooves or recesses in the surface to secure the phosphor bronze, and fits an annular casing on the plunger of the thickness required, which is then moulded, and the casing is removed, and the phosphor bronze cast.

ELECTRIC LAMPS.—The invention of Mr. H. UPTON, of Newcastle-on-Tyne relates to electric lamps of the kind in which the illumination is produced by the incandescence of carbon or other suitable material through which an electric current is passed, the object which he has in view being to provide for the automatic feed of the carbon in a simple manner. For this purpose he rests the end of a vertical carbon upon two studs or rollers, which are the terminals of the conductors to and from the lamp, the carbon bearing on those studs by its own weight and sinking downward as its lower portion becomes consumed. The electricity passing from one stud to the other through the lowest part of the carbon heats it to incandescence, thereby producing illumination. The carbon may be pressed against the studs by a weight or spring, and in that case it may be directed upwards or at any desired inclination.

HOW TO INVEST—SIXTEENTH EDITION.—Had a very large circle of readers not highly appreciated "How to Invest," it is obvious that it would never have passed through fifteen distinct editions. Mr. E. J. Bartlett, the author, must certainly be congratulated upon such a result, which is due to the happy combination of a facile pen and a keen observation. He modestly describes himself as "one upon whom nearly 20 years' experience has not been thrown away." Indeed it has not, if one is simply to judge by the mass of information he has collected within the hundred or more pages which now form his book. As an author Mr. Bartlett is to be commended; as a public adviser upon the investment of surplus profits his remarks are entitled to attention and to respect. In "How to Invest" there is an absence of the dictatorial spirit and of the best known of the personal pronouns which does not always distinguish the productions of gentlemen associated with mining. His style is terse and vigorous, and his manner of stating facts and even hazarding opinions commands the attention of the reader. "How to Invest" has been almost wholly re-written. It might have been published under a new title, but the author has probably done well to adhere to the old one. There are several new chapters, as for example Remarks on Investing Money, Mining Prospectuses (a most valuable addition), and Home Mines. Mr. Bartlett prefers a somewhat heavy indictment against Indian gold mines, but it will be better known six months hence than now whether his fears are well or ill founded. It is stated that a large edition of "How to Invest," published at the beginning of the year, has been exhausted, and for the present one a yet enlarged measure of success is anticipated.

WELSH MINES.—The Newborough Silver-Lead Mine has been reported upon by Mr. E. J. Barn, of Llanrhaidr, Oswestry, and Mr. Henry Francis, of Llanidloes, but they have omitted to date the reports; the same may be said of Mr. Absalom Francis, of Rhosddu, Wrexham, on the British Silver-Lead Mines. The latter mines were favourably reported upon by Mr. Walter Eddy, of Fron, Llangollen, on June 30; he considers the mines a fair and legitimate undertaking, as they present the most promising appearances of any lead mining adventure in the district.

NEW GREAT WHEAL VOR.—A Helston correspondent furnishes additional observations *a propos* of the developments at this mine. He writes: "There can be no doubt, as has been already stated, that this is the most extraordinary discovery in tin that has been made in Cornwall in modern times. There are two striking features which particularly arrest my own attention. The first is that so much rich tinstuff should be found so near the surface, whereas miners are generally satisfied if they find ore-yielding ground in depth. The second is that as depth is attained the lode improves both in size and richness. A few months ago, when the operations were first begun, the croakers said that the lode would not hold out, but this has not proved correct, and now every practical mining man for miles round is decided in his opinion, that here is a mine that will very soon be equal to any of the very best mines of the present century. I fully share this opinion, and believe that the opening out at New Great Wheal Vor will prove a grand stimulus to the revival of tin mining throughout the county. I am reminded of the old times, and am persuaded that we are on the eve of a profitable experience, such as distinguished the earlier years of the Nineteenth Century. For instance, there was Wheal Buller, which on a subscribed capital of 1280*l.* yielded to the end of 1853 no less than 104,000*l.*, and shares were sold for 1000*l.* each. Tresavarn with an outlay of 3000*l.* only returned in dividends 800,000*l.* From the year 1814 to June, 1848, it yielded the enormous quantity of 307,970 tons of copper ore, which realised 1,679,735*l.* 7*s.* 6*d.* In this mine the highest dividend was paid in 1833, when a sum of 60,480*l.* was divided among the shareholders; at the same time shares, 20*l.* paid, were sold for 2000*l.* each. Devon Great Consols is another extraordinary and well-known instance. The capital subscribed was 1024*l.*, but in 1857 the mine represented a market value of 425,000*l.*, while from 1844 to 1853—a period of 10 years—the dividends amounted to 375,808*l.* These are only two or three instances of the magnificent results of mining enterprise in Cornwall and Devon. I confess to the opinion—and I know it is shared by many competent judges—that New Great Wheal Vor will be a prize equal to the very best of the old mines. As for mining in Cornwall, it is but in its infancy, and after the long night of depression and gloom, which has overshadowed it for several years,

a new epoch of substantial prosperity is at hand. The most far-seeing already discern the dawn."

MINERALOGICAL SCIENCE.

The Mineralogical Society of Great Britain and Ireland appears to be making satisfactory progress, and the admirable manner in which the Transactions are recorded and issued ensures to all connected with it the full benefits of membership, whether they be able or unable to attend the periodical meetings. The last issued volume of the Society's Magazine (London: Simpkin, Marshall, and Co.) contains the excerpt minutes of the Council meeting and of the general meeting, held in the Lecture Theatre of the Museum of Practical Geology in December last, of the meeting at the same place in February, and of the general meeting at the High School, Dundee, in March. The Transactions proper are principally occupied with an elaborate and interesting paper by the President—Prof. M. F. Heddle—in continuation of his record of the Geognosy and Mineralogy of Scotland. Referring to the rock sculpture of Sutherlandshire, he remarks that, notwithstanding the very considerable extent of shore line which the deepest seated rock exposes to the ocean, it exhibits extremely few illustrations of either cliff or rocky shore. The rocks which do occur are of considerably less altitude than even the great durability of the material of which they are composed would warrant us in expecting. The foremost conclusion certainly is that the present could not have been the oldest coast line, or indeed a coast line for any length of time—that had the old Hebridian land stood through the long ages of its waste at the same sea level as now, that sea must have, in many places, cut cliffs of an altitude very much greater than those which we now find upon its shores. The paper is rendered particularly lucid by the neat little sketches which the Professor gives of Cape Rath, the glaciated outline of Hebridian gneiss near the same place, Rhu Yuachil and Rochil Stack—Torridon sandstone, Rhu Kervag and Stack a Chlo, Clo More, Poul a Vourin—all Torridon sandstone, also Whitten Head—quartzite cliff, and hornblende bands of old gneiss enduring after removal of felspathic, south of Cape Rath. There are numerous analyses of the minerals met with and examined, but for these the reader must refer to the Transactions.

As Dr. Heddle's paper occupies 58 pages, it is, of course, impracticable to give even the briefest outline of it. It is followed by a valuable paper on the Chemical Composition of Epidote from Queenstun by the Abbé Renard, read at the Swansea meeting in August, 1880; a paper on Brochantite and its associations, by Mr. W. Semmons, past President of the Liverpool Geological Society; and an interesting series of crystallogenic observations, by Chevalier Von Hauer, of the Imperial Geological Institute of Vienna. The Transactions convey a vast amount of instruction.

CASTING INGOTS.

To produce an ingot of different grades of metal, for use in the manufacture of articles of steel or homogeneous iron, or iron and steel which shall possess the toughness of one grade of metal and the hardness of the other grade, Mr. E. WHEELER, of Philadelphia, U.S., uses by preference two Bessemer converters—one for one grade and the other for another grade of metal, and prepares a mould in which is placed a core. The metal is poured from one converter into the mould, and when that portion of the metal in contact with the core has become sufficiently hard the core is removed, the hard skin preventing the fluid metal from flowing into the space left by the core, into which space is at once poured molten metal of a different grade from another converter. This last mass of metal fuses the hard skin left by the withdrawal of the core from the first mass of metal, and the two metals become united and form a homogeneous ingot, in which, however, they occupy distinct positions. In some cases the ingot is formed by heating a bar of one grade of steel or homogeneous iron nearly to the point of fusion, placing it in the mould in place of the core described above, and pouring another grade of metal into the space around the bar, the heat of this metal being sufficient to fuse the outer portion of the core, and thus effect a union of the two metals.

If it is desired to prepare an ingot with a soft centre and a hard exterior, the metal which is poured around the core may be cheap high phosphor steel or iron, while the metal which takes the place of the core is soft iron or steel low in carbon or homogeneous iron. If, on the other hand, it is desired to prepare an ingot with a hard centre and a soft tough exterior, the soft metal is poured around the core, and the high phosphor metal is poured into the interior. This latter arrangement of the metals in the ingot is especially desirable when it is to be employed in the making of armour plating. When the ingot is to be worked up into railroad rails it is preferable to make it with a hard centre and a soft exterior, with a preponderance of the soft metal on one side, so that when the ingot has been rolled into rails the head will be of hard metal, while the flange and sides will be soft. In ordinary rails, on the contrary, the head is almost invariably soft, while the flange is hard owing to the rapid cooling of the thin parts, while the head cools more slowly, and is consequently softer. The ingots thus cast being of malleable metals may be worked up into almost any and all articles of manufacture, among which may be mentioned railroad rails, and all the different kinds of railroad iron, as car axles, crank pins, nuts, bolts, screws, and nails, connecting rods, frog plates, coupling links and pins, and locomotive wheel tyres, and all kinds of bridge iron, channel, angle, and frost irons, beams, girders, and the like, also horse shoes, hoops, bands, wire, and chains, also boiler plate and tubes, and gun tubes, and monitor plate and armour plate, safe plate, fire box plate, and also iron for all agricultural implements, crow bars, harrow and rake teeth, and the like, and also all tools, such as sledges, hammers, turning tools, chisels, dies, and the like, and also all kinds of carriage iron, such as axles, tyres, brace iron, and so forth.

CASTING METALS.

Hitherto in the manufacture of ornamental castings or of plain castings of special forms in iron, bronze, or other metal, it has been the practice to employ metal flasks or mould boxes, into which the workman by hand tool has rammed the sand which is required to take the impression of the pattern. The process to which the invention of M. Jules Demogeot, of Paris, chiefly relates differs essentially from this because the sand is rammed by a machine, and also because instead of having at least two parts of the flask for each mould there is only a single flask for each description of piece or casting. Castings requiring only two flask parts in the ordinary method, such as bedstead frames, balconies, or architectural roses. According to the present invention the flask for these castings is composed of two pieces connected at one corner by a hinge and at another by a clamp or other fastening. The inside of the flask is well smoothed or dressed. The bottom is of cast-iron and likewise well dressed, and is connected by means of screws to one-half only of the flask. Above the bottom is a cast-iron or bronze plate having formed in it one of the faces of the mould to be produced; this plate is well dressed on all its edges, and the hollow of the pattern well polished. The height of the flask above this plate should be double that of the sand moulds to be produced.

The flask having been dusted with charcoal in order to prevent the adherence of the sand it is filled with unrammed sand; it is then placed in a press, the descending ram or plunger of which carries in relief the other face of the mould; the part carrying the design should enter the flask truly and freely, but have no play therein; it is of bronze or cast-iron, and is attached to the ram or plunger by means of a screw. The pressure having been given the flask is removed and opened, and the mould is then easily removed therefrom, the plate not being fixed to the bottom. There is thus obtained a sand mould presenting on one of its faces in relief one face of the pattern. By piling several of these moulds one upon another a number of spaces will be formed which can be filled with the molten metal. Each mould has a groove formed down its side, and has also several smaller grooves, these grooves being produced by projections on the flask. The large groove forms the gate or runner, and the smaller grooves allow of the escape of the hot gases which are disengaged from the sand during the casting. The moulds may be

piled on a cast-iron table and held by vertical plates, which are movable, so as to be capable of holding moulds of various dimensions. Castings requiring more than two flask parts are differently treated. For a espagnolette, for example, the bottom of the flask and the plunger of the press will each carry in relief one-half of the mould, but instead of the face of the moulded handle, he makes in the large moulds a trapezoidal opening. In a small flask and with another press he makes small moulds exactly filling these trapezoidal openings, and having recessed therein the form of the face of the handle. He then mounts all these moulds as in the first case. For the manufacture of chains, which is very expensive with the ordinary method, the flask differs from the preceding. It is still composed of an iron frame, but three of the sides are fixed, and the fourth is held to the other by clamps. This side bears in relief one-fourth of the large link of the chain to be manufactured. The plunger of the press bears in relief at each side one-eighth of the small link. Thus, a sand mould is obtained which has recessed in one face one-fourth of the one link, and on a face perpendicular to the first two-eighths of the other link. Four of these moulds combined will give an entire link and two half links, and by placing four others at the side of the first four, two entire links are obtained united by another, an 80 on.

METALLURGICAL FILTERING APPARATUS.

Reference was made a few months since to certain improvements in metallurgical processes introduced by Mr. J. F. N. Macay, of Charapoto, and he has now added a process of metallurgical filtering which promises to be of considerable practical utility. Before describing his invention he remarks that minute sub-division of the solid substances, pressure, motion, and heat generally, if not always, favour the solution of solid substances, whether the solution is the result of physical or chemical action, and that in effecting the separation of liquid from solid matters by filtration it is of the first importance to keep the filtering surface from being clogged by the particles of solid matter, and to present a clear and unobstructed filtering surface for effecting the rapid separation of the liquid from the solid matters; and he claims that by his present invention these important conditions are capable of being realised in a very effective manner.

Within a cylinder of wood or other material not chemically acted on by the materials treated or the re-agents employed is enclosed an inner cylinder of the same character, but perforated with holes and lined with asbestos-cloth or other suitable filtering material. Between the inner and outer cylinders there is an annular space, and the inner cylinder is kept in place by longitudinal and circumferential partitions, the former of which divide the annular space into a number of distinct compartments, each provided with a draw off cock for running off the liquid when separated by filtration. This cylinder is capable of being rotated, and is provided with doors or manholes in one of the heads by which the matters to be treated may be introduced, and the undissolved residue removed, and the cylinder is also provided with a tubular journal or journals for the introduction of steam or air under pressure, or otherwise, which may be blown, forced, or drawn into the annular space for the purpose of keeping the filtering surface clear. He places within the inner cylinder the ore or other matter to be treated (previously ground or otherwise reduced to a pulverulent state) together with the solvents by which it is to be treated.

By imparting rotary motion to the cylinder (the draw off cocks and man holes being closed) the solid matters are brought into intimate contact with the solvents, and by forcing steam or air into the space between the inner and outer cylinders, and thence through the filtering medium into the inner cylinder, any solid matters that may adhere to the filtering surface are disengaged therefrom, whereby the said surface is kept clear, and the solid matters are kept in suspension in the liquid. The annular space between the inner and outer cylinders being divided into compartments by longitudinal divisions, the liquid which passes through into it is carried round by the rotation of the cylinder and flows back into the inner cylinder, thus helping to keep the filtering surface clear and unobstructed. When the soluble substances are dissolved and it is desired to separate the liquid from the solid matters, the draw off cocks are opened, and then by giving a slow rotary motion to the apparatus the liquid may be decanted off from the bulk of the solid matter, and at same time filtered from any such matters which it may hold in suspension by passing through the filtering medium. By this rotary decanting action a practically clear filtering surface, unobstructed by solid matter, is constantly presented for the liquid to pass through.

FILTERED AIR SAFETY-LAMP.

An ingenious arrangement for increasing the safety and intensifying the light of safety-lamps, so as to enable petroleum to be used in place of the more expensive oils usually employed, has been patented by Dr. Heinzerling and Mr. Hammeran, of Frankfurt-on-Main, and consists principally in filtering the air through glass wool, asbestos, slag wool, or other finely divided fibrous mineral material before it is allowed to enter the cylindrical chamber of the lamp. By this means particles of coal dust are eliminated, and thus one source of danger never before, so far as they are aware, provided against in safety-lamps is eliminated. The lamp is divided into three parts—the lower, middle, and upper parts. The lower part is composed of the oil box, and above that a wire gauze cylinder closed below the oil box, and above by a diaphragm of wire gauze. The interior of this wire gauze cylinder is filled with the mineral wool before mentioned. Through this cylinder the burner from the oil box passes, carrying a small cylinder or gallery for a lamp chimney. The middle part of the lamp consists of a strong glass cylinder, which is tightly fitted to the other two parts in any convenient manner. The third part is a wire gauze basket or chamber covered with a lid of wire gauze; this is strengthened by brass or other stays brazed on to it, and is filled with the mineral wool aforementioned. On the bottom of the wire gauze basket is a small plate funnel or inverted bell axially over the burner. A strong iron wire frame or metal bar frame encloses the lamp, and can be opened on a hinge. It serves as a protecting and fastening frame for the three aforesaid parts, and can be shut with a padlock. It is preferably provided with large meshed wire netting to more thoroughly protect the glass cylinder.

The exact shape of the three parts of the lamp proper is immaterial, the main point being to arrange them so that the air shall have to pass through two thicknesses of wire gauze and the mineral wool before coming to the wick. The inventors have found that if in the wire gauze chamber below and the wire gauze basket above one or more layers of wire gauze are used safety is increased. That if the interstice between the wire gauze basket be filled with glass, thread, or silicious mineral wool of any kind, covered or incrustated with alum, sulphate of copper, or their equivalent, the threads covered with the sulphate or kindred salt absorb almost all the radiant heat, and at the same time the fine dust disseminated in the air that often causes explosions.

MANUFACTURE OF METALLIC SHEETS.—The mode of manufacturing sheets and plates of tin, zinc, and lead, and alloys of these, patented by the Hamburger Gummiwaaren Company, consists of bringing the metal in a molten state on to or between a pair of revolving rollers. If the rollers are made of sufficient diameter, and be cooled off by a flow of water, or by leading currents of cold air through the interior, sheets of metal of any desired thickness may be produced by directly rolling the same out of the molten metal. It is preferred to place the rollers, which are made of iron or steel, horizontally one beside the other in a framework. The bearings must be made adjustable to secure the exact distance required for rolling sheets of metal of certain thickness. The axes of the rollers are in communication by gear of cog wheels fastened to the same in a similar manner as the rollers of a rolling-mill for rolling iron or steel. The diameter of the rollers and the number of revolutions given to the same varies, and depends on the melting point and degree of hardness of the corresponding metal. For producing plates of metal after this process the rollers must first be placed close together to

produce a sheet of metal, and the distance between the rollers must during rolling only gradually be enlarged, as far as to correspond to the required thickness of plate. After the plate has arrived at the desired thickness the process of rolling may be carried on in continual action.

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Meetings of Public Companies.

SCOTTISH AUSTRALIAN MINING COMPANY.

The half-yearly meeting of shareholders was held at the Cannon-street Hotel yesterday—Mr. ADOLPHUS WM. YOUNG, Chairman of the company, presiding. Mr. Grainger, the secretary, read the notice convening the meeting. The report was taken as read. The report states that the company's sales of coal amounted to 64,272 tons for the half-year ending the 30th of June last, and the net profit realised from the colliery during that period amounted to 2435l. 18s. 7d., as is shown by the annexed colliery profit and loss account, the necessary disbursements for maintenance and renewal having been made.

The directors have had the Cadia properties inspected and reported on, as respects their gold capabilities, by Mr. James Munday, of Victoria—a well and favourably known engineer—and have received his report, of date the 28th of June last, accompanied by a large box of specimens taken from different parts of the properties examined by him. From this report it appears that, although he found in the course of his examination no particular part of the properties to be very rich in gold, yet that metal proved to be very generally disseminated, more or less, throughout them at and near to the surface. From the alluvium at shallow depths and the reefs on the properties gold to the extent of 329 ozs. altogether has from time to time been raised; in one instance (in 1873) a nugget of upwards of 39 ozs., and in November 1880 several nuggets, varying from 1 oz. up to 12 ozs., were found. The deepest working on the reef does not exceed 165 ft. Eight reefs, more or less showing gold, have already been discovered on the properties. Past operations on the properties have proved that they were very rich for copper at and near the surface, ore having from time to time been raised from them which has yielded, including some ore purchased for the purpose of fluxes, 976 tons of fine copper. The works, though numerous and extensive, have all been near the surface, the deepest level not exceeding 25 ft. from surface, except a portion of an adit into the sloping hill, the end of which may be said to be 40 ft. from surface. The ore raised has yielded 9, 12, 14, 17, and a considerable portion of it 20 per cent. of copper.

The accounts for the six months ended June 30 show a balance of profit (including 5652l. 11s. 7d. brought forward from the previous account) of 10,444l. 8s. 4d. The directors propose the payment of a dividend at the rate of 10 per cent. per annum on the paid-up capital of the company (160,000l.), free of income tax, which will require 6000l., and to carry forward to next account 2444l. 8s. 4d. = 10,444l. 8s. 4d. It is proposed to make the dividend payable on Nov. 5.

The CHAIRMAN, in moving the adoption of the report, observed: When the board last met the shareholders they explained fully the causes which had led to the reduction of the price of coal to 8s. a ton. They stated that this reduction was not brought about by this company's manager; that, indeed, Mr. Morehead strongly disapproved of the step and considered it quite uncalculated. Since then, unfortunately, the collieries who had taken the lead in reducing the price had put it down further to 7s. a ton. Mr. Morehead had not followed them, but had upheld the price of Lambton coal throughout the half-year at 8s. a ton. Of course, when coal could be bought at 7s., no one would, if he could help it, go to a colliery which was asking 8s. The board had, therefore, felt no surprise that the sales of Lambton this half-year were so much less than they were at the corresponding period of 1880, or that the collieries selling at 7s. had done so much larger a trade than Lambton had at 8s. The wonder rather was that Lambton had sold as much as 64,272 tons in the half-year, but the fact was the other collieries had found their powers very severely tried by the demand for their coal, which the low price of 7s. had brought to them, and had not always been able to supply all that was required, and had, therefore, had to refuse business sometimes. Thus it had happened that Lambton had been able to do a trade which, under the circumstances, could not be regarded as bad. It had left a small profit (although very small—9d. a ton), but that was better than throwing away the coal for nothing, which would be the case at 7s. a ton. In the meantime the company had kept its coal in the ground for better times. This was the history of the past half-year, and represented the position of matters at the present time. He had prepared himself to make some remarks in the way of forecasting the future, which various competing companies would come to see that the present price of coal was yielding them no profit, and would arrange to raise it. He was happy to say that his expectation on this point had been realised, for a telegram had that morning arrived from Sydney, from Mr. Morehead, dated yesterday, stating that the price of coal had been raised. The telegram was as follows: "All the Northern collieries agree to ten shillings as price during year 1882; no allowance or deduction whatever beyond two-and-half per cent." This was only what the

board had been expecting, and he was glad that the telegram had arrived so opportunely. The price of ten shillings was a fair working price. It would leave a profit on working, and, at the same time, was not so high as to attract coal from England or elsewhere, or encourage the establishment of new collieries. As regards the matter of the company's profits, it would be seen that the dividend now proposed was mainly paid out of profits that were not divided on the last occasion. It could not be expected that the profits of the current half-year would be better than those of the past one to any material extent, as up to December next present low prices would prevail, but there would be a certain amount of profit, and it was to be borne in mind that there was a reserve fund of 20,000l., which the shareholders might use a portion of to make up a fair dividend if it should be thought prudent and desirable to do so. The Cadia property has been thoroughly inspected and reported on by Mr. Munday from Victoria. His report had been sent to all the shareholders along with reports by Capt. Holman, who had been for so long intimately and practically acquainted with the property. There was also given a report by Mr. John Darling, who, it should be mentioned, did not speak from personal acquaintance with the property, but from an examination of the various reports that the board had laid before him to give his opinion upon. The matter was, therefore, pretty exhaustively dealt with by the documents and the directors' report, and the board would now be very glad to hear the remarks of shareholders, and learn their views upon it. The Cadia property was a very interesting one. Iron, copper, and gold had been found upon it; the two former in very large, the latter at present only in small quantities. As regards iron, of course if cheap coal could be obtained in its near vicinity the working of it could be made profitable. The company's Lambton Colliery was too far away to be made available for the purpose, but if coal should be found near Cadia that would add great value to the property in respect of its iron contents. It had been rumoured that coal had been seen a few miles off, but at present this was no more than a rumour. The question was, what was to be done with Cadia? Should the company work it? Of course they had power to do so; but he thought the great body of shareholders would be averse to having capital called up (on which dividend would have to be paid) in order to embark on what, after all, was a speculation. (Hear, hear.) Should they just wait and hold the property for the chapter of accidents? If a body of persons could be found to buy the property or lease it, the board thought on the whole that that would be the best; but any sale must include two elements—a fair sum of money, and a share of profits in the shape of royalty. The board were quite prepared to entertain offers on those terms. They would not be inclined to sell the property without royalty, as they considered there were many chances of success about it; but for a fair sum of money and a royalty they would be happy to treat. He moved—"That the report of the directors be received and adopted, and that the dividend proposed therein at the rate of 10 per cent. per annum upon the paid-up capital of the company, 160,000l., be confirmed; the same to be payable, free of income-tax, on and after Saturday, Nov. 5."—This was seconded by Alderman Sir CHARLES WRETHAM.

Mr. FREWER said he had had a great weight taken off his mind by the telegram announcing a rise in the price of coal. As regards Cadia he thought the company should have two strings to their bow, and that the board should work the property so that they might not be entirely dependent on coal. He thought Mr. Munday's report, which he had carefully studied, gave promise of more than merely reasonable success, and would justify the spending of 5000l. or 10,000l. by the company whenever prosperous times should again come round.

Mr. WARD (a director) reminded the last speaker that in past years the company had spent a good deal in working Cadia. If they had a large amount of surplus funds, as they had some time since, it might perhaps be desirable to resume operations upon it. If a good reserve fund should be again accumulated the working of Cadia might again become a matter for consideration.

A few remarks having been made by other shareholders, the CHAIRMAN observed that the matter was a question of what it was prudent to do. Money had been spent by this company on Cadia, and it was a question of whether, on the whole, they should go further with a speculation which, however, was no doubt in many respects a promising one. Whatever was done by the directors they would take care that the company retained a good interest in the property.

The resolution was then put to the meeting and carried unanimously. The auditors' fees were voted, and a vote of thanks to the Chairman and directors brought the proceedings to a close.

Original Correspondence.

INDIAN GOLD MINES.

SIR,—What has come over the Mysore and Wynad crushings? Have any of the Wynad companies commenced regular crushing? We know from the flourish of trumpets announcing the Maharajah's visit to Mysore, as given in the Indian papers, that the Mysore company had begun. Since that I hear from the spot that the mining captain found that more gold was washed away than should have been, and so he very properly stopped stamping, altered his machinery, put up additional pans to save the metal, and recommenced steady work on the 25th ult. The stone is got from two or more of the reefs the company is working on, one of them being of a thickness of over 18 feet. Why the directors of that company will not get news by wire of the gold got from (say) 100 or 200 tons, is inconceivable, particularly in the present state of the market for mining shares, when all delays but breed fresh rumours of bad outturns. It is also known as a fact in the district that four of the neighbouring mines are now working on the same or similar reefs, and two or three of them are hauling stone on to the bank. The Nundydroog Company give us reports of work done: why do not the others? The outturn from crushing cannot, I am assured, be under 12 dwts. to 1 oz. per ton, depending, however, on a good deal upon whether or not much of the surface stone has been mixed up with the stone from the deeper sinking. A WYNAD AND MYSORE SHAREHOLDER.

DETERMINING THE QUANTITY OF WATER CARRIED MECHANICALLY BY STEAM.

It is known that saturated steam or vapour in contact with its generating liquid possesses for every degree of heat a pressure that cannot be exceeded. If, therefore, a recipient contains a certain constant temperature, a mixture of steam and of water carried off, thereby the pressure of this mixture will be constant even when the internal volume is increased. But as soon as, in consequence of the increase of volume, the water carried with the steam is entirely evaporated any further increase of volume will produce a decrease of pressure, because the steam, being no longer saturated, will then obey the same laws as other dry gases. If, therefore, the moment of such decrease of pressure be accurately observed, the quantity of water carried mechanically by steam of a given temperature and pressure can be readily determined by the increase of volume necessary to produce such decrease of pressure. The ratio of the weight of water carried thereby to that of the dry steam contained in the mixture will be the quotient of the increment of volume divided by the known original volume of the mixture. In practically applying this method of determining the quantity of water, Mr. F. A. Brocq, of Paris, employs a special apparatus which gives accurate results.

A closed casing provided with inlet and outlet valves, by which it communicates with the steam generator, contains two recipients of determined volume, having openings by which they communicate with the interior of the casing, which openings can be closed by slides, valves, or cocks from the outside. Each recipient contains a plunger or piston that can be made to travel therein by means of a screw spindle so as to increase or decrease the volume of the recipient. Between the two recipients is a vessel divided into two compartments which are filled with suitable liquid such as mercury, and have each a flexible diaphragm subjected respectively to the steam pressure in one of the recipients. The two compartments communicate with each other by a pipe leading to the outside of the casing where a portion of the pipe is of glass, and contains a moveable index, the tube being also filled with the mercury. In operating the apparatus the steam from the generator being in the first instance allowed to circulate through the casing and through the recipients, the openings of the recipients are closed and the plunger or piston of the one is moved by the screw spindle so as to increase its volume. So long as there is free water present the pressure in such recipient will remain the same as that in the other recipient, notwithstanding the increase in volume, but as soon as the volume is increased to such an extent that the whole of the free water is converted into steam, any increase of volume beyond that point will result in a reduction of pressure in the recipient. In consequence thereof the excess of pressure in the other recipient in acting on the diaphragm of the gauge will force a portion of the mercury through the pipe into the other compartment, and in thus moving the index will show that there is no more free water present. On now determining the exact amount by which the volume of the recipient has been increased, which can be easily done by observing the number of revolutions of the screw spindle, the quantity of water carried by the steam can be readily calculated as already explained.

It will be evident that a single recipient might be employed, the diagram of the one compartment of the pressure gauge being acted upon directly by the steam in the casing itself, but it is preferable to employ two in order to insure uniformity of temperature on both

sides of the pressure gauge. It need scarcely be stated that any known construction of pressure gauge might be substituted for that described, provided it will indicate differences of pressure existing in two localities. Mr. Brock's method may be employed with advantage for regulating the superheating of steam, as it enables the action of the superheater to be so controlled that it will heat the steam only to the point of evaporation of the whole of the free water.

KEEPING VEHICLES ON THE RAILS.

An invention is now being introduced in France which although designed for use on railways would appear to be much more likely to prove successful in collieries, where the weight to be dealt with is considerably less, and where the arrangement could be more readily applied. When a tram or locomotive runs off the rails it will either sink in the ballast and destroy the road, or it will leave the road and descend the embankment, or run into the slope of the cutting, according to the nature of the road at which the accident takes place. Consequently serious accidents are likely to happen to persons in train or vehicle, and the rolling stock and permanent way are damaged, the line being frequently blocked for a considerable time. For repairing the line a numerous staff is required, and also special appliances are necessary for replacing the vehicles upon the rails. The inventor (Mr. H. Ruelle, C.E., of Paris) provides either in front of or behind the end wheels a part of a cylinder of sheet-steel which forms a slide or skate, and extends across the rails. It is solidly attached by means of a guard plate, which is made in one piece either with the longitudinal framing of the vehicle or in the case of wagons or carriages with the guard plate, according to the construction and arrangement of the rolling stock, and catches, projections, or flanges are provided upon the cylindrical surface so as to keep the vehicles which leave the rails upon the road.

It will be readily understood that as soon as the wheels leave the rails this apparatus transforms the vehicles, so to speak, into a sledge, which is guided by the flanges above mentioned. He sometimes places his device in front, and sometimes behind the wheels of each vehicle, but whatever may be the number of the wheels of the vehicle two only of the said apparatus or devices will be required. In a carriage or a tender it is as a rule more advantageous to arrange the apparatus between the two axles. This arrangement allows the two apparatus to be connected by tie-rods, and when so united they may be made smaller than would otherwise be possible, and thus may be manufactured at less cost. For locomotive engines it is preferable to arrange the apparatus at the ends, and this may also be adopted with other vehicles if found desirable.

The apparatus may also be provided with a couple of screw-jacks, by means of which a vehicle or engine that has left the rails may be replaced thereon, a screw uniting the two screw-jacks allowing the vehicle to be replaced upon the rails when it is brought to the level of the same. When a vehicle leaves the rails the said apparatus or devices constructed according to his invention carry the weight of the same; the wheels do not act upon the road except by their weight, and they become, as it were, loose or free. The inclined surface of the cylinder causes the vehicle which has left the rails to be moved away therefrom sufficiently so that the bolts of the fish-plates will not be cut. An engine which leaves the rails will at once slide on the said device; it will be held upon the road by the flanges, and not being able further to deviate thus prevents the other vehicles of the train from leaving the rails, which vehicles, without the said apparatus, might all have run off and obstructed the adjacent rails. The weight of the vehicle or locomotive engine, in consequence of the sliding thereof, assists in slackening the speed of the train or the locomotive which has left the rails. The driver and stoker can in a few minutes, by means of the screw-jacks which are placed in readiness, lift the engine, and by means of the connecting screw place it upon the rails.

HYDRAULIC LIFTING APPARATUS.

Instead of allowing the discharge water from the hydraulic cylinders of the lifts to flow away, Mr. Michael Scott, of Great Queen-street, Westminster, proposes to cause it to enter a hydraulic cylinder, having a plunger loaded so as to give such pressure as will nearly balance that required for supporting the crane or lift plunger, and from this cylinder he draws the water for supplying the hydraulic pumps that charge the accumulator at the higher pressure required for working the lifts or cranes. The pumps are thus supplied with water already under considerable pressure, and the work which they have to perform is reduced to that of giving the additional pressure required. This action of the pumps in conjunction with the intermediate cylinder may be obtained by combining the intermediate cylinder with a pump or accumulator. The cylinder has a loaded trunk position, so that the annular area may be smaller on one side than on the other.

When the lift or crane weight is descending the water from its cylinder is admitted to act on the full area of the loaded piston, causing it to rise, the smaller quantity of water from the annular space above the loaded piston being allowed to flow to waste. When it is required to raise the lift or crane communication is opened between the two ends of the cylinder, and also with the high pressure supply main; the loaded piston thereupon descends, forcing the contents of the cylinder partly along the supply pipe to the lift or crane, and partly to the annular space above the piston. Two or more cylinders with their loaded pistons may be arranged to work alternately or successively, as above described, so that their action may be continuous, as might be required when they are employed in connection with several lifts or cranes, and in such a case the piston of each may, by means of suitable tappets, work the valves of the others. When it is required to make these pistons act with varying pressure, he arranges in connection with their cylinders two or more subsidiary cylinders, the pistons of which may when required be connected to the load on the main piston, so as to increase or diminish it according as these subsidiary pistons are submitted to pressure in the one direction or the other.

SELF-LUBRICATING CORVE WHEELS.

The importance of attention to matters of small detail in connection with colliery operations was shown in an interesting paper read before one of the societies of mining engineers a few years since, and the suggestion has, no doubt, been productive of much economy. The automatic lubrication of corve wheels was amongst the first to receive consideration, and important improvements have from time to time been introduced. Messrs. TRIPPLET and WALTON, of Sheffield, now propose the construction of a hollow bossed wheel with, firstly, two internal bushes which are fitted tightly into the hollow boss of the wheel, on each side thereof, the said bushes bearing on the axle, and being so constructed and fitted as that they can be readily displaced and replaced by new ones when worn by the rotation therein of the axle; and, secondly, a perforated cylinder or cover extending over and fitting into the outside of the two bushes aforesaid, through which said perforations the oil (or other lubricant) in the hollow boss passes slowly to the axle. The wheels are recessed in the boss, and one bush can be driven or otherwise secured into one side thereof; the perforated cylinder can then be inserted in the hollow boss over the said bush, and the second bush can then be driven into or secured in the opposite side of the said boss. The bushes can be bored to fit smoothly into the axle. The hollow boss will be perforated for the purpose of filling it with oil, and the said perforation will have a plug or similar device to retain the oil in the hollow boss. The bushes and wheels can be made interchangeable, so that any bush will fit any wheel, and it is claimed that these wheels will be more durable than those of ordinary construction.

As a modification where two bushes are employed they can be so fitted into the hollow boss as to form practically a continuous bearing, the said bushes extending into the hollow boss until within, say, $\frac{1}{4}$ part of 1 in. of one another, the said bushes being grooved from their inner ends to allow the lubricant to pass to the axle. The space between the said bushes can have a perforated cover

through which the lubricant will pass to the axle or otherwise. As a further modification, and for use with hollow bossed wheels, one bush only is employed, the form thereof being circular in cross section, or hexagon, octagon, or other convenient form on the outside thereof, and being bored to fit the axle, the hole in the boss of the wheel being of the same form as the outside of the bush; the bush will have a projecting collar at one end thereof which will bear up against the face of the wheel boss. The bush will have the perforations in or about the centre of its length through which the lubricant contained in the hollow box will pass to the axle; in fitting this bush into the wheel, the wheel or hollow boss will be heated and contracted on to the bush, which is inserted in the hole in the said boss, and the bush can be further secured by key, set screw, or other similar appliance.

PROTECTING IRON SURFACES.

There are probably few things of greater importance in connection with machinery used for industrial purposes than the thorough protection of the surfaces of the iron from the action of moisture and atmospheric influences, and, indeed, from corrosion generally. In the methods as at present practised for the preservation of articles of iron (namely, coating or covering them with paints, japans, enamels, the electro deposition of less oxidizable metals, or the formation of a film of magnetic oxide on their surfaces), the protecting coat is very thin, and not able to withstand much wear and tear, or, when thick, the fineness and character of the casing is entirely destroyed. In consequence, moreover, of these protection materials being only laid on to the surface of the iron, the slightest abrasion renders the iron accessible to the action of oxidizing agents. For the purpose of overcoming the difficulties attending the perfect preservation of the iron, it is proposed, according to the process patented by Mr. Shedlock, of Uxbridge, to treat the surface by subjecting it in suitable vessels to the action of any acid solution possessing the properties of dissolving iron, and forming therewith soluble salts. Cast-iron being a combination of iron and carbon or graphite, the action of the acid solution is such that the surface iron is dissolved, leaving a porous skin of carbon or graphite of tenacity sufficient in itself to resist considerable wear and tear, and the thickness of which may be regulated by the length of exposure of the article to the action of the acid, and at the same time maintaining the exact outer form and delicacy of contour which the articles possess before treatment. The carbon or graphite skin thus formed is not a mere layer or detachable film, but forms a continuous substance with the body of the casting. All that is necessary for protecting the body of the iron is to fill up the pores of the graphite skin with a material possessing like qualities with the graphite. The materials applicable for this purpose are pitch, resins, india rubber and gutta-percha dissolved in suitable solvents.

When the graphite skin has acquired the desired thickness, by reason of the iron articles having been exposed to the action of the dissolving agent, they are removed from the vessel and placed in air-tight chambers, in which they are subjected to the action of hot or cold water or steam for the purpose of removing the iron salt which has formed in the pores of the graphite skin. As soon as it is ascertained that the iron salt in solution is removed from the pores of the graphite skin the solution water, &c., is removed from the air-tight vessel, and heat is applied to the exterior for the purpose of vapourising any water remaining and removing the vapour thus formed by means of a pump or other contrivance. A more or less perfect vacuum being formed in the air-tight vessel containing the cast-iron articles, communication is opened with the reservoir containing the solution of pitch, resin, india-rubber, and gutta-percha, which is forced in the air-tight vessel by the pressure of the atmosphere, and the pores in the graphite skin are filled with the solution, so that when the solvent is vapourised and withdrawn from the vessel the solid material is deposited therein, thus producing a perfectly protective skin or covering. Cast-iron vessels or apparatus prepared as described are capable of being used for the production or treatment of the most corrosive acids, and possess advantages which will enable them to replace the more costly and less efficient apparatuses now manufactured in glass, earthenware, and other expensive materials, both as to their greater durability and economy. Articles of cast-iron may also be used for electrical apparatus, such, for instance, as battery troughs, in which case the surface and pores of the graphite skin must be covered and filled with an insulating material prepared as a solution and the solvent removed, as hereinbefore described.

In some cases where it is desired not only to protect the articles of cast-iron from oxidation but to impart to their surfaces an ornamental appearance this may be secured by using pigments in combination with the protective solution, or it may be by the use of coloured enamels. When it is desired that the pores and surface of the graphite skin shall be filled and covered with an enamel, then it is not absolutely necessary to remove the iron salt from the pores of the graphite skin, but the articles may be removed from the vessel containing the dissolving agent, and at once placed in a vessel containing a solution capable of producing a double decomposition with the iron salt, suitable solutions for this purpose being the silicate of soda and the salts or oxides of lead. When silicate of soda solution is used, and the dissolving agent has been dilute hydrochloric acid, double decomposition of the two salts takes place, chloride of sodium being formed and remaining in solution, and silicate of iron being insoluble fills up the pores in the graphite skin. The surface of the article is now covered with an enamel of the desired colour, which upon being subjected to heat fluxes, and in combining with the silicate of iron contained in the pores of the graphite skin will form a hard vitreous enamel, capable of resisting rough usage, and effectually protecting the cast-iron article from oxidation. When it is desirable to produce an enamel on the surface and in the pores of the graphite skin which shall flux at a low temperature, then instead of employing the silicate of soda the oxides or salts of lead may be used, which, although producing an enamel protective against oxidation under ordinary conditions, yet is not sufficiently hard to resist heavy usage.

It will readily be understood that the invention may be utilised in ornamenting the iron to almost any extent. The pores and surface of the graphite skin may be filled and covered with the less oxidizable metals by means of electro-deposition, or they may be deposited from their solutions by simple immersion therein of the cast-iron articles, or the metals may be reduced from their salts or oxides at elevated temperatures. An example of such reduction suitable for the protection of an article of cast-iron is when the pores and surface of the graphite skin are filled with an oxide of lead and subjected to heat; the oxygen of the lead oxide combines with the graphite, forming carbonic anhydride or oxide, and the lead is deposited in the metallic state in the pores of the graphite skin. Other metallic salts and oxides are capable of producing like results under favourable conditions.

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Mr. THOMPSON transacts business in every species of Stock Exchange and
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Deals in all descriptions of STOCKS and SHARES at close market prices. He
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Speculative accounts opened in all leading Stocks of the day.

HERODSFOT MINE.—We can SELL ANY PART OF ONE
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Estimates given for the erection of Mining Plant.
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Advances made on Stocks, Shares, and other negotiable Securities at equitable
rates of interest.

Speculative accounts opened on favourable terms.
Special Business in Gold Mining Shares.
C. T. R. and Co.'s Monthly Price List and Report on the Stock Markets sent
post free on application.

LEAD ORES.					
Date.	Mines.	Tons.	Price per ton.	Purchasers.	
Oct. 27	Roman Gravel.	50	£ 9 17 0	Nevill, Druce, and Co.	
—	ditto	50	9 15 0	ditto	
—	ditto	50	9 14 0	ditto	
—	Northern	20	8 17 6	J. Dinning.	

BLENDE.					
Date.	Mines.	Tons.	Price per ton.	Purchasers.	
Oct. 22	Frongoch	100	£ 3 0 6	Vivian and Sons.	
—	ditto	50	2 12 0	Dillwyn and Co.	

BLACK TIN.					
Date.	Mine.	Tons. c. q. lb.	Price p. ton.	Amount.	Purchasers.
Oct. 26	Wheal Coates	8 10 17	£ 461 17 6	£ 526 8 2	Redruth Co.

COPPER.					
Date.	Mine.	Tons.	Price per ton.	Purchasers.	
Oct. 27	Parys Copper	60	£ 2 18 6	Nevill, Druce, & Co.	
—	ditto	160	1 10 0	Newton Keats.	
—	ditto (precip.)	60	8 15 0	Bibby, Sons, and Co.	
—	Moria Du	70	1 15 6	ditto	

THE LIST OF APPLICATIONS FOR SHARES will be CLOSED on THURSDAY, the 3rd November.

THE ISABELLE GOLD AND SILVER MINING COMPANY (LIMITED).

Capital £150,000, in Shares of £1 each.
Issue of 25,000 Shares of £1 each. Payable 2s. on application, 3s. on allotment, and the balance of 15s. per share as it may be from time to time required in calls of 2s. 6d. per share, at intervals of not less than two months between the dates of each call.

DIRECTORS.
The Right Honourable the Earl POULETT, Army and Navy Club, S.W.—CHAIRMAN.
Admiral J. H. SELWYN, 16, Gloucester Crescent, Hyde Park, W.
Captain CHARLES LOUSADA, Beauchamps, Hollington, near Hastings.
HENRY FREDERICK AMEDROZ, Esq., 13, Blandford Square, N.W.
JOSEPH PYKE, Esq., Devonshire Place House, N.W.
HENRY SYME, Esq., The Drive, Brighton; and Portland Club, W.
BANKERS—The IMPERIAL BANK (Limited), 6, Lothbury, E.C.
SECRETARY—W. C. CHALMERS, Esq.
OFFICES—No. 114, PALMERSTON BUILDINGS, OLD BROAD STREET, E.C.

ABRIDGED PROSPECTUS.

The Directors of the Isabelle Gold and Silver Mining Company (Limited) desire to intimate that, according to advices received from their manager, he is actively engaged hauling pay ore from the mines of this company to the Exchequer Company's mill for immediate reduction into bullion. Certain alterations as well as additions were found necessary at this mill for the proper treatment of the Isabelle Company's ore, but these are now nearly completed; in the meantime, however, trials upon a small scale have been already made with very satisfactory results.

Mr. Lewis Chalmers, therefore, writes that he anticipates making regular shipments of bullion before the close of the present year.

Assays of this ore are by—
Mr. Lewis Chalmers.....Gold, \$20.67 per ton of 2000 lbs. £ 4 5 4
Silver, \$92.88 19 3 5
Copper, 40 per cent. 25 10 0

Mr. A. E. Arnold, F.C.S....Gold, 1 oz. 6 dwts. 3 grs. £48 18 9
Silver, 101 ozs. 18 dwts. 9 grs.... 21 13 2
Copper, 21 23-100 per cent. 13 10 9

r. Fred. ClaudetGold, 1 oz. per ton 20 cwts. £40 8 5
Silver, 64 ozs. 17 dwts. 0 grs. ... 4 0 0
Copper, 18-50 11 15 10

Johnson and Matthey ...Gold, 0.975 ozs. per ton 20 cwts. £29 11 5
Silver, 57-150 ozs. " 12 5 6
Copper, 20-20 per cent. 12 17 6

These last two assays are made from what is stated to be second-class ore, of which a considerable quantity has been already extracted, and is ready for treatment. The average value taken from the four assays is equal to 36l. 19s. 7d. per ton.

The manager states that the copper alone will more than cover all expenses, leaving the precious metals at net profit. The average of the gold and silver, according to the above assays, shows a value of 18l. 11s. per ton.

The mills at which the ore is to be worked can treat about 20 tons per day, and as there are about 300 working days per annum, the calculation of profits may readily be made.

To cover the various outlays, which, as previously indicated, have immediate returns of revenue in view, and at the same time prosecute explorations in the tunnel, additional capital is desirable, and the directors, therefore, invite subscriptions on the above terms for 25,000 shares of £1 each at par.

The directors at same time draw attention to a most important fact—namely, that the main gold and silver bearing lodes of the Isabelle Company have not even yet been tapped. Those of the I.X.L. Gold and Silver Mining Company, and those of the Exchequer Gold and Silver Mining Company, being at a greater distance from the mouth of the Isabelle tunnel, of course, remain undeveloped pending its completion. It is, however, estimated that the vertical of these main Isabelle lodes will be intersected by the tunnel within 830 and 1130 ft. respectively from the present face, at a depth of 1200 ft.; the I. X. L. lodes about 3188 ft., at a depth of 1400 ft.; and the Exchequer lodes 3700 ft., at a depth of 1600 ft. At these depths very important and profitable results are expected from all of these gold and silver mines within a reasonable time.

The directors do not accept any fees, but make their remuneration dependent entirely upon the net profits actually made.

THE NEW GREAT WHEEL VOR TIN MINING COMPANY (LIMITED).

Notice is hereby given, that the LIST OF APPLICATIONS FOR SHARES will CLOSE on SATURDAY, the 29th of October, for LONDON, and MONDAY, 31st of October, for the COUNTRY.

THE NEW GREAT WHEEL VOR TIN MINING COMPANY (LIMITED).

Capital £100,000, divided into 100,000 Shares of £1 each.
2s. 6d. to be paid on application, and 7s. 6d. on allotment, the balance of 10s., if required, to be paid in instalments of not more than 2s. 6d. each, and at intervals of not less than three months.
It is, however, fully expected that no further calls will be necessary, 70,000 shares only to be allotted; the remaining 30,000 shares, with 10s. paid, being taken by the vendors in part payment.

Allotments will be made *pro rata*.
The vendors guarantee a dividend of 7½ per cent. per annum for two years.
SECRETARY—Mr. W. S. LAMBERT.
OFFICES—1, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

BANKERS—ALLIANCE BANK (Limited), Bartholomew-lane, E.C.

PROSPECTUS.

This company is established for the purpose of acquiring and working an extensive sett, known as the New Great Wheel Vor, situated at Breage, near Helston, in the county of Cornwall, and adjoining the old Great Wheel Vor and Wheel Metal Mines.

Full Prospectuses, with Reports, can be had on application at the Company's Offices, 1, Crown-court, Threadneedle-street, E.C.

The following is the latest report from the Mine:—
NEW GREAT WHEEL VOR.

AGENT'S REPORT, OCT. 19.

We are still sinking and stoping at the No. 2 shaft as fast as possible. Our

stopes with the shaft are 3 fathoms long, and the lode is 6 ft. wide, and tinny throughout, and worth £75 per fathom.
Every working day we are bringing up slabs of tin, little or much, from the shallow depth of 10 fms. 2 ft. from the surface. The last parcel brought to surface this day from the bottom was the richest since our commencement, and the lode is increasing in value every foot we sink.

GLAMORGANSHIRE.

FOR SALE, BY PRIVATE TREATY.

PRIMROSE COLLIERIES, SWANSEA VALLEY.

About eight miles from the Port of Swansea, and on the Swansea Vale Section of the Midland Railway.

THE ABOVE HIGHLY VALUABLE AND EXTENSIVE COLLIERIES, comprising an area of upwards of THREE THOUSAND ACRES, are now in the Market by reason of family arrangements, and the necessity for winding-up the Estate of a deceased Partner.

The Collieries are held for a long term of years at very reasonable royalties, a large outlay has been recently made on the property, and further works are in contemplation, which, when completed and fully developed, will be capable of yielding an output of from 600 to 800 tons per day.

The Coal is of a superior quality, commanding a ready market, it is second to none for fuel making, and being specially adapted for the manufacture of tinplates, the bulk of the present workings is taken at the numerous works in that trade situated in the Swansea Valley and its adjacent districts, whilst the Port of Swansea, to which there is easy access by railway and canal, affords every facility for doing a large shipping trade, and the Midland (via the Great Western and Neath and Brecon Railways) puts the property into immediate communication with all other coal-consuming districts.

The Machinery and Plant on the Works are in good order and condition. The Loose Plant includes several rent-free Railway Trucks, whilst others held under redemption hire agreements have but short unexpired terms to run.

In addition to and occupied in connection with the Collieries is a good Farm, properly stocked, and numerous Cottages held upon beneficial leases, and the whole property forms a very valuable business concern, well deserving the attention of capitalists.

For further particulars and to treat, apply to the Primrose Colliery Company, Pontardawe, Swansea Valley; to Messrs. STRICKS and BELLINGHAM, Solicitors, Swansea; and to Mr. ALFRED CURTIS, Solicitor, Neath.

A BARGAIN.

FOR SALE, a NINETY-NINE YEARS' MINING LEASE, from 1839, of about THREE HUNDRED ACRES, at a royalty of £5 yearly, in MOUNTAIN LIMESTONE and MILLSTONE GRIT, &c.

There are SEVEN VEINS OF COPPER ORE, from 10 to 20 per cent.; also FIVE VEINS OF LEAD ORE, from 60 to 80 per cent.; and also indications, they say, of veins of CINNABAR or ores of QUICKSILVER. The outlay, &c., has been about £5000, and the present price is a similar amount, cash; and which is dirt cheap, considering that the royalty is next to nil, whilst some mines pay for same thousands yearly; and again the old men say there is plenty of ore. An adjoining mine made large profits, and the veins run into this sett.

Address, W. WEBB, New Dock, Llanelly.

THE LONDON AND SOUTH AFRICAN EXPLORATION COMPANY (LIMITED) WILL OFFER FOR SALE, BY PUBLIC AUCTION, at Kimberley, on the 6th of December next (unless previously disposed of by Private Contract), about ONE HUNDRED AND SEVENTY CLAIMS in the DIAMOND MINES OF DU TOITS PAN AND BULFOORTEN, of which some are in blocks, admirably situated for independent mining operations. Each claim has an acre of depositing ground.

Further particulars and plans may be obtained at the Company's Offices, No. 19, Finsbury Circus, London, where intending purchasers can treat for the claims.

NOTICE.

A VALUABLE MINING PROPERTY, situate within four miles of the City of Bristol, Gloucestershire, TO BE DISPOSED OF, the present sole owner (from ill health) wishing to creep out of this climate for a warmer one during the winter.

The area contains over 8000 acres, and will be divided into four districts.

For further particulars, apply (by letter only) to JOHN J. WHITTRICK, Esq., Hanham Hall, near Bristol, Gloucestershire.

N.B.—If not disposed of by Private Contract, will be offered for Public Sale in the month of November next.

FLUOR SPAR FOR SALE, splendid qualities, from ONE to FIVE HUNDRED TONS.

Prices and samples on application to GEO. G. BLACKWELL, Mineral Broker, 26, Chapel-street, Liverpool.

FLUOR SPAR FOR SALE, splendid qualities, from ONE HUNDRED to FIVE HUNDRED TONS.

Price and samples on application to the Secretary, Tamar Silver-Lead and Fluor-Spar Mining Company (Limited), 85, Gracechurch-street, London, E.C.

FOR SALE, a DOUBLE-ACTING DRAWING MACHINE for water-power, with reversing gear, all brass-bushed.

A LARGE IRON CAGE, with break, &c., in good condition, and calculated to draw the stuff in any mine for 200 fms. deep, WILL BE SOLD—A BARGAIN.

To treat, apply to the Manager of the Herodsfoot Mine, Liskeard.

TIN PLATE WORKS.

FOR SALE, BY PRIVATE CONTRACT, as a going concern, extensive and valuable TIN PLATE WORKS, advantageously situated in Glamorganshire.

For particulars, apply to Messrs. GASKOIN and FRY, Solicitors, Swansea.

ON SALE, PUMPING ENGINE, inverted cylinder 60 inches diameter, 9 feet stroke, Cornish valves, cataract, wrought-iron main beam and cast-iron balance beam, box and weights. In first-class condition.

ONE PAIR COUPLED HORIZONTAL CONDENSING PUMP-ING ENGINES, cylinders 18½ inches in diameter, and 4 feet stroke. Heavy fly-wheel, 14 ft.; pinion, 4 feet 2 inches; spur, 11 feet 9 inches; pumping crank, wood connecting rods, and two cast-iron L legs.

Apply to H. BRAMALL and Co., Sankey Brook Collieries, St. Helens, Lancashire.

FOR SALE, a 30 H.P. PORTABLE STEAM ENGINE; with link-motion reversing gear, has drum and gearing complete for winding and pumping.

A 14 H.P. PORTABLE WINDING and PUMPING ENGINE.
Also a 6 H.P. PORTABLE HOISTING ENGINE.

Apply to—**BARROWS and STEWART, ENGINEERS, BANBURY.**

ALEXANDER SMITH, M.Inst.C.E., CONSULTING ENGINEER and VALUER of IRONWORKS, MINING, RAILWAY, ENGINEERING, and other PROPERTY, PLANT, and MACHINERY, 1, PRIORY STREET, DUDLEY

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Valuations for Stock Taking or any other purpose upon very reasonable terms.

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By D. C. DAVIES, F.G.S., Mining Engineer, &c., Author of "A Treatise on Slate and Slate Quarrying."

"The most exhaustive and practically useful work we have seen."—*Mining Journal*.

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CROSBY LOCKWOOD and CO., 7, Stationers' Hall-court, London, E.C.

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AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and obtain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

HERBERT C. JONES, Canada Land and Loan Agency.

DIE EPOCHE: ORGAN FOR POLITICS, COMMERCE, INDUSTRY, FINANCE, SCIENCE, and LITERATURE, is published in German every Tuesday, Thursday, and Saturday, at Passage roman, Rouen, Bucharest, at 16s. per annum, exclusive of postage (about 6s. 6d.), and may be obtained through any foreign newsagent in London; or by remitting 3s. direct to the Publisher, as above.

EMPLOYERS' LIABILITY ACT, 1880.

THE NATIONAL BOILER INSURANCE COMPANY (LIMITED).

CAPITAL £100,000—ESTABLISHED 1864.

OFFICES—22, ST. ANN'S SQUARE, MANCHESTER

This Company's Policies COVER DAMAGE TO BOILER and SURROUNDING PROPERTY, and also, WITHOUT EXTRA CHARGE, claims for which Insurers are liable under the Employers' Liability Act, 1880, for personal injury resulting from Explosion or Collapse of Flues of Insured Boilers.

Insurers have the benefit of the company's independent inspection, the great value of which is proved by the comparative immunity from disaster of the thousands of boilers inspected, &c., by this company.

Prospectuses and other information on application as above.

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THE BOWLING IRON COMPANY (LIMITED), BRADFORD, have made considerable additions to their STEEL WORKS, and are now in a position to EXECUTE ORDERS for STEEL CASTINGS of almost any pattern and size.

ELECTRIC BLASTING.

THE UNDERSIGNED SUPPLIES THE MOST EFFECTIVE MATERIAL FOR ELECTRIC BLASTING.

EXPLODING MACHINES £7 10 0

ELECTRIC PLATINUM WIRE FUSES ... 1 5 0

per 100.

Capt. C. A. McEVOY, 18, Adam-street, Adelphi, London, W.C.

CLOSING OF SHARE TRANSFER BOOKS.

THE DIRECTORS of the COLAR GOLD MINING COMPANY (LIMITED)

Hereby give notice that the TRANSFER BOOKS of the company will be CLOSED from the 31st day of October to the 10th day of November next, inclusive.

20, Cockspur-street, S.W., Oct. 28, 1881.

LA PLATA MINING AND SMELTING COMPANY.

The Board of Directors have DECLARED a DIVIDEND of \$15,000 out of the profits for the month of September, viz.—SEVEN AND A HALF CENTS PER SHARE, PAYABLE on November 1st, leaving at credit of Reserve Fund, \$60,989-98.

F. ANDREWS, London Registrar.

21, Great Winchester-street, E.C., October 21st, 1881.

MINE "EL CALLAO," GUAYANA, VENEZUELA

COUPONS OF SHARES..... 322

Gold in bars produced in the month of August, 1881, and remitted to Messrs. Baring Brothers and Co., London, 6028-84 ozs.

DIVIDEND distributed for each coupon, \$100.

(Signed) A. J. CAGNINACCI, Vice-President.

(Signed) VICTOR J. GRILLET, Treasurer.

TAKE NOTICE.—The "AUSTIN" or "NACUPAI" CONCESSION (numbered from 1 to 10 inclusive), situate in the Department Roscio, State of Guayana, United States of Venezuela.—I, the undersigned duly constituted Attorney of the Orinoco Exploring and Mining Company, hereby warn intending purchasers that the above CONCESSIONS (including "Austin, No. 9") are CLAIMED as the property of the Orinoco Exploring and Mining Company of Philadelphia.

(Signed) T. MORRIS PEROT, Attorney.

TAKE NOTICE.—The "ANDRAL" or "PANAMA" CONCESSION, situate in the Department Roscio, State of Guayana, United States of Venezuela.—I, the undersigned President and duly constituted Attorney of the South American Mining Company, hereby warn intending purchasers that the above CONCESSIONS are CLAIMED as the property of the South American Mining Company of Philadelphia.

(Signed) T. MORRIS PEROT, President and Attorney.

RIO TINTO COMPANY (LIMITED).
Notice is hereby given, that AN EXTRAORDINARY GENERAL MEETING of the Company will be HELD at the Cannon-street Hotel, in the City of London, on FRIDAY, the 4th day of November, 1881, at Two o'clock in the afternoon, when the following Resolution will be proposed:—

SPECIAL RESOLUTION.

"That in accordance with the recommendation of the Board of Directors the Capital of the Company be increased by the issue of 100,000 Shares of £10 each."

Should the above Resolution be passed by the requisite majority, it will be submitted for confirmation as a Special Resolution to a second Extraordinary Meeting, which will be called for the purpose.

Notice is further given, that at the Extraordinary General Meeting hereby called the following Resolution will also be proposed:—

RESOLUTION.

"That in the event of the foregoing Resolution being confirmed as a Special Resolution the board of directors be and they are hereby authorised and empowered to issue and dispose of the 100,000 newly-created shares to such person or persons whether shareholders or not shareholders of the company at such time or times at such premium upon such terms (and if deemed expedient with a right to participate in the final dividend for year 1881) and in such manner as the board may think fit."

Holders of share warrants to bearer will receive a ticket of admission on depositing their warrants in accordance with the Articles of Association three days prior to the meeting, either at the Company's offices in London, or at the Société Générale, rue de Provence, 56, Paris; or at the Deutsche National Bank in Bremen.

Share warrants to be deposited in Paris must bear the French Government Stamp.

By order of the board, R. J. FENNESSY, Secretary.

Offices of the Company—2, Copthall Buildings, London, E.C., 25th October, 1881.

HANGE OF ADDRESS.

FRED. W. NORTH, F.G.S., LAND AGENT and MINING ENGINEER, Member Inst. North of England Mining Engineers, Inst. Mechanical Engineers, Royal Colonial Institute, late Mining Engineer for the Governments of Cape Colony and of Natal.

OFFICES.

ROWLEY HALL, NEAR DUDLEY, STAFFORDSHIRE.

34, CLEMENTS LANE, LOMBARD STREET, LONDON, E.C.

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TO INVESTORS SEEKING SOUND, CHEAP, GENUINE, AND PROGRESSIVE INVESTMENTS.

MESSRS. THOMPSON and SON, PLYMOUTH, after 30 years' practical experience, do not hesitate to recommend the UNDERMENTIONED MINE SHARES for IMMEDIATE PURCHASE, well knowing they will be long rank amongst the richest mines Cornwall has ever produced, and at present prices the cheapest in the market. The capital in each, although sufficient, is very small, not one-quarter of the promotion money charged by some vendors of abandoned and impossible mines. The various considerations offered to shareholders in the following mines, as compared with those of the generality of the latest announced ventures, are deserving of the careful judgment of mining shareholders. The fullest particulars will be given, and questions answered. The mines referred to are—

THE OLD WHEEL ROSE SILVER-LEAD AND SPATHOSE IRON MINE.
This mine is in the parish of St. Columb, in the Mounts Bay. It is not near nor has anything akin to East Wheel Rose in Newlyn. This mine has only been worked 58 fms. deep, returning over £100,000 worth of lead, containing 60 ozs. of silver to the ton. This little depth for a lead mine in Cornwall is only where West Chiverton, East Wheel Rose, and other rich mines commenced to make; therefore, it is nearly maiden ground. The fullest particulars may be seen in Messrs. Thompson's pamphlet on Sound and Rising Mines. Sent post free. These shares are at present only 20s. each, fully-paid.

NEW PENROSE TIN and COPPER MINE COMPANY (LIMITED).
This mine is in the parish of Breage in the Mounts Bay, and was extensively worked under the sea from the cliff, but never inland. Over £100,000 profit was made from the workings, but the sea broke in and the mine stopped; an immense area of mineral (maiden) ground is now being explored and worked inland, and the same lode which made such riches under the sea is now being sunk on. Any week a great discovery may be made. These shares are only at par, 20s. each, fully-paid. Shareholders should apply for particulars. Capt. Charles Thomas, the late manager of Dolcoath, pronounced the mine a worthy undertaking.

THE ROYALTON TIN MINE COMPANY (LIMITED).
This mine is in the parish of St. Columb, the property of the Prince of Wales as Duke of Cornwall; it is only 25 fms. deep, and has been worked as an open-cutting, where the tin stone was so very prolific that £20,000 were realised with very slight machinery. No mine offers a better prospect of early success than this, as there are thousands of tons of tin stone now in sight. These shares are at par, 20s. fully-paid, but will very soon go to a premium.

Messrs. Thompson and Son cannot guarantee to deliver any large quantity of these shares at par, as any day they may be dealt in at enhanced prices. Messrs. Thompson invite a perusal of their circular, which contains particulars of other mines.

Plymouth, September 8th 1881.

NOBEL'S DYNAMITE



Manufactured and sold by
NOBEL'S EXPLOSIVES COMPANY (LIMITED),
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Head Office: 149, West George Street, Glasgow.

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THE COTTON POWDER COMPANY (LIMITED)

RECOMMEND TO CONTRACTORS, MINERS, PIT SINKERS, QUARRYMEN, AND OTHERS, THEIR

TONITE, OR COTTON POWDER,

AS BEING THE SAFEST, CHEAPEST, AND STRONGEST OF ALL EXPLOSIVES.

TONITE is the most efficient and economical blasting agent ever invented, and is largely in demand. It does not contain any Nitro-glycerine, and is, therefore, exempt from the dangers of exudation, or of freezing and its attendant process of thawing.

The Company also manufacture PATENT DETONATORS of a quality much superior to the foreign article. The trade supplied on favourable terms.

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ALL KINDS OF
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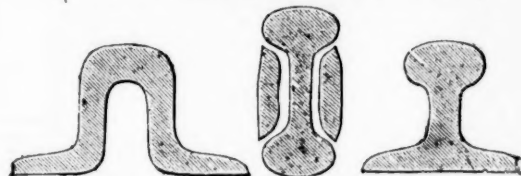
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at real value; offers his assistance for securing undeveloped mining properties at
home prices. As to care taken in reporting, reference is made to the *Mining Journal*
Supplement, April 1, 1876, containing a report on property of the Maxwell Land
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Engineering and Mining Journal, Feb. 28, 1874.

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Divid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
3939 Blue Hills t, c, St. Agnes	4 6	6	2 1/2	3	0 4	0 2
0000 Caron t, Cardigan	2 0	0	2	1	0 4	0 2
0000 Carn Brea, c, t, Illogan	9 7	11	30 1/2	28	28 1/2	52
10240 Devon Gr. Consols, c, a, Tavistock	10 14	10	90	87	89	123
4296 Dolcoath, c, t, Camborne	0 9	9	45	42	42 1/2	24
6400 East Pool, t, c, Illogan	2 0	0	4	2 1/2	3 1/2	0 4
12500 Frongoch, t, c, Illogan (10000 sh. iss.)	0 9	9	45	42	42 1/2	24
40000 Glasg. Car. t, c, (30000 sh. £1 pd., 10000 15s. pd.)	2 0	0	4	2 1/2	3 1/2	0 4
8500 Gorned and Merilyn Con., t, Flint	2 10	0	3	2 1/2	3	0 5
15000 Great Laxey, t, c, Isle of Man	0 6	0	19	18	19	27
6400 Great Hurth, t, Durham	0 6	0	7	0 1/2	7	3
20000 Grogwinth, t, Cardigan	2 0	0	3	2	3	0 16
10240 Gunnslake (Clitters), t, c	2 2	0	3	2 1/2	3	0 15
2800 Isle of Man, t, c, Isle of Man	25	0	0	2	2	0 15
20000 Leadhills, t, Lanarkshire	6 0	0	2	1 1/2	2	0 10
430 Lisburne, t, c, Lanarkshire	18	15	0	1	1	0 10
10000 McLennan, t, c, Lanarkshire	5 0	0	9	8	9	0 10
9000 Minera Mining Co., t, Wrexham	7 0	0	3	2 1/2	2 1/2	24
20300 Mining Co. of Ireland, c, t, c	7 0	0	3	2 1/2	2 1/2	24
8000 Mona, t, c, Anglesea	5 0	0	10	6	7	0 10
11829 North Hendre, t, Wales	2 10	0	6	5 1/2	6	3 12
8146 Ditto	1 5	0	3 1/2	3 1/2	0 8	6
2000 North Levant, t, c, St. Just	13	6	0	4	3	0 16
5000 Penrhall, t, St. Agnes	3 17	6	1 1/2	1 1/2	1 1/2	0 10
6000 Penrhall, t, St. Agnes	5 0	0	5	5	0 10	5
12090 Phoenix United, t, c, Link	1 0	0	4 1/2	3 1/2	4	0 13
18000 Pr. Patrick, t, c, Cardigan	2 0	0	2	1	2	0 4
10000 Red Rock, t, c, Cardigan	1 0	0	2	1	2	0 4
12000 Roman Gravel, t, Salop	7 10	0	12 1/2	12	12 1/2	8 11
4000 Rhydallt, t, Wales	10	0	0	0	0	0 5
512 South Caradoc, t, c, Cleef	1 5	0	55	50	55	749
6123 South Condurrow, t, c, Camborne	6 5	6	11	10	10 1/2	8 13
9000 South Darren, t, Cardigan	1 16	0	1 1/2	1 1/2	1 1/2	0 4
4500 South Wheal Frances, t, Illogan	7 12	4	17	16	16 1/2	0 4
6000 Tincroft, c, t, Pool, Illogan	11	10	0	20 1/2	19	19 1/2
15000 Van, t, Llanidloes	21	6	0	10	10	25
3000 West Chiverton, t, c, Flintshire	1 0	0	2	1 1/2	2	0 1
512 West Ffolys, t, c, Redruth	95	10	0	14	13	33
1200 West Wael Beton, c, Camborne	28	0	0	17 1/2	15	16
6000 West Basset, c, Illogan	7 0	4	14	13	13 1/2	27
12000 Wheal Crebor, c, Tavistock	2 4	0	3 1/2	3 1/2	0 12	9
1024 Wheal Eliza Consols, t, St. Austell	18	0	0	0	0	0 42
6000 Wheal Grenville, t, Camborne	15	0	0	12	11	12
4295 Wheal Kiddy, t, St. Agnes	5 4	6	1 1/2	1 1/2	1 1/2	12
3000 Wheal Pevor, t, Redruth	7 11	0	14 1/2	12	13	8 4

FOREIGN DIVIDEND MINES.

Shares.	Divid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
35500 Alamos, t, Spain	2 0	0	1 1/2	1 1/2	2 4	0 0
130000 Almaden and Tinto Consol., t, Spain	1 0	0	3 1/2	3 1/2	0 6	3
20000 Australian, c, South Australia	7 7	6	2	1 1/2	1 5	6
15000 Bidecay Creek, c, California	4 0	0	1 1/2	1 1/2	0 18	0
20000 Cape Copper Mining, t, South Africa	7 0	0	45	44	46	43
35000 Cesna Sulph. Co., Romagnia, Italy	10	0	0	0	1	0
50000 Copiapo, c, Chili (44 shares) t	3 8	9	3	2 1/2	2 1/2	1
70000 English & Australian, t, c, St. Austell	2 10	0	1 1/2	1 1/2	2 19	9
25000 Fortuna, t, Spain	2 0	0	4 1/2	4 1/2	7	9
6000 Frontino & Bolivia, c, New Gran.	2 0	0	3 1/2	3 1/2	8	0
20000 La Plata, t, Leadville	3 0	0	6	5 1/2	6	0
15000 Linars, t, Spain	3 0	0	4 1/2	4 1/2	13	17
85000 New Guinea, c, Venezuela	5 0	0	4 1/2	4 1/2	0 5	6
1000 Ditto, Debentures	100	0	102	95	100	6
3000 Oregon, c, Oregon, U.S. (pref. sh.)	4 0	0	0	0	0 2	6
50000 Panguitch, c, Chili	4 0	0	5 1/2	4 1/2	0 16	9
25000 Patulung, t, Brazil (in 6000 £1 pd.)	4 0	0	0	0	0 1	0
10000 Port Phillip, c, Clunes (22 shares)	1 0	0	12	10	12	23
54000 Richmond Consol., c, Nevada	5 0	0	15 1/2	15 1/2	12	11
85880 Rio Tinto, c, Sp. Comp. Bids, Huachuca	10	0	101	100	102	5
225000 Ditto, shares	10	0	24 1/2	24	25	0
40000 Santa Barbara, c, Brazil	1 0	0	1 1/2	1 1/2	0 11	9
100000 Scottish Australian Mining Co., t	1 0	0	1 1/2	1 1/2	10 p. cent.	Apr. 1881
100000 Ditto, New	0 10	0	3 1/2	3 1/2	10 p. cent.	Apr. 1881
50000 Sentein, t, c, bl, Arège, France	1 0	0	3 1/2	3 1/2	0 2	0
22500 Sierra Buttes, c, California	2 0	0	1 1/2	1 1/2	2 2	6
40625 Ditto, Plumas Eureka	2 0	0	2 1/2	2 1/2	2 13	0
100000 So. Indian, c, Madras (fully pd.)	1 0	0	1 1/2	1 1/2	0 4	0
253000 St. John del Rey (45 Stock and multiples dealt in)	10	0	0	0	p. c. for half-year, Dec. 1880	
92566 Tharsis, c, t, Spain (31000 sh. 7s. pd.)	1 0	0	43 1/2	41 1/2	6 10	6
20000 Tolima, c, t, Colombia	1 0	0	0	0	0 16	6
25000 Victoria, c, t, Australia	1 0	0	0	0	0 13	10
15000 Western Andes, c, Colombia	5 0	0	0	0	2 18	0
2100 W. Prussian (5500 pref. sh. £10 pd.)	10	0	10	9	10	4

§ Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

Shares.	Divid.	Last wk.	Clos. pr.
30000 Alston United, t, Cumberland	1 0	0	1 1/2
12000 Asheton, t, Carnarvonshire	5 0	0	0
10000 Atlantic, t, c, t, (res. shares 23,000)	1 0	0	1 1/2
35000 Basset & Buller Cons., t, c, t, Illogan	1 0	0	0
11533 Bedford Unit, t, c, t, (11 sh.)	0 8	0	1 1/2
30000 Blackburnbanks & Gildersdale, t	0 5	0	0
30000 Bodirris, t, c, t, Breghishire	1 0	0	1 1/2
30000 British, t, c, t, Wrexham	1 0	0	1 1/2
20000 Bwlch United, t, c, t, Cardigan	0 17	6	3 1/2
25000 Callington Consols, t	2 0	0	2 1/2
50000 Cambrian, t, c, t, Cardigan	2 0	0	0
50000 Carn Camborne, t, c, t, Camborne	1 0	0	1
20000 Carnarvon, t, c, t, Carnarvonshire	1 0	0	3 1/2
37500 Carnarvonshire Cons., t, c, t, Llanrwst	2 0	0	3 1/2
30000 Carpellia Consol., t, c, t, Stephens	1 0	0	1 1/2
6300 Cathedral Cons., t, c, t, Gwynedd	0 10	0	0
20000 Central Foxdale, t, c, t, Isle of Man	1 17	6	2 1/2
25000 Coal-y-Fedw & Pant-y-Bardd, t	1 0	0	1 1/2
2450 Cook's Kitchen, t, c, t, Illogan	30	14	24 1/2
15500 Court Grange United, t, c, t	1 0	0	0
6400 Crook Burn, t, c, t, Cumberland	0 12	6	3 1/2
14000 Crosswood Mining Lands, t	1 0	0	1 1/2
45000 D'Eresby Mountain, t, c, t, Llanrwst	0 10	0	2 1/2
20000 Denbighshire Consolidated, t	3 0	0	3 1/2
12000 Derwent, t, c, t, Durham	4 0	0	1 1/2
50000 Devon, t, c, t, Tavistock	1 0	0	1 1/2
50000 Devon Friendship, t, c, t, Tavistock	1 0	0	1 1/2
12000 Devon Great United, t, c, t, (21 shares)	1 5	0	1 1/2
50000 Drakeville, t, c, t, Calstock	1 0	0	3 1/2
10000 Dubby Syke, t, c, t, Durham	1 0	0	3 1/2
12000 East Blue Hills, t, c, t, St. Agnes	0 5	0	0
6000 East Botallack, t, c, t, St. Just	0 8	0	1 1/2
6144 East Caradoc, t, c, t, Cleef	4 3	6	3 1/2
4000 East Chiverton, t, c, t, Penzance	10	4	2 1/2
30000 E. Craven Moor, t, c, t, Pateley Bridge	1 0	0	3 1/2
12000 East Crebor, c, t, Tavistock	0 11	6	3 1/2
15000 East Devon Cons., t, c, t, Buckfastleigh	2 0	0	2 1/2
30000 East Herodotus, t, c, t, Liskeard	1 0	0	1 1/2
20000 East Long Rake, t, c, t, Wales	1 0	0	1 1/2
21000 East Roman Gravel, t, c, t, Salop	0 15	0	1
18000 East Van, t, c, t, Llanidloes	5 0	0	1 1/2
4096 East Wheal Buller, t, c, t, Gwynedd	0 10	0	0
2048 East Wheal Lovell, t, c, t, Helston	15	3	2 1/2
10000 East Wheal Rose, t, c, t, Newlyn East	0 10	0	0
12000 Gawton, t, c, t, Tavistock (21 shares)	1 18	0	3 1/2
14000 Glenroy, t, c, t, Isle of Man	4 0	0	3 1/2
10000 Gwedd, t, c, t, Liskeard	1 0	0	1 1/2
10000 Gwedd, t, c, t, Liskeard	1 0	0	1 1/2
32000 Goginan, t, c, t, Cardigan	1 0	0	1 1/2
25000 Goodere, t, c, t, Cleef	1 0	0	1 1/2
20000 Griffin, t, c, t, Carnarvon	1 0	0	0
20000 Great Dyllife (10000 sh. issued)	1 0	0	1 1/2
12000 Great Holway, t, c, t, Flintshire	5 0	0	5 1/2
10000 Great Polgoth United, t	1 0	0	1 1/2
6000 Great West Chiverton, t, c, t, St. Agnes	0 5	0	3 1/2
5000 Gwynedd Myndy, t, c, t, Flint (pref.)	4 0	0	1 1/2
7000 Gwynedd Amal, t, c, t, Carnarvon	1 0	0	3 1/2
12000 Herodotus, t, c, t, Liskeard	1 0	0	1 1/2
18000 Hingston Down, c, t, Calstock	0 12	0	1 1/2
20000 Kirkcubbin, t, c, t, (20000 unissued)	1 0	0	1 1/2
6000 Killifreth, t, c, t, Chacewater	4 1	6	1 1/2
25000 Kit Hill Gr. Cons., t, c, t, (21 sh.)	0 15	0	3 1/2
15000 Lady Ann, t, c, t, Llanarnmor	1 0	0	1 1/2
30000 Lady Ashburton, t, c, t, Callington	1 0	0	1 1/2
15000 Lady Bertha, t, c, t, Tavistock	1 0	0	0
25000 Levant, t, c, t, St. Just	11	10	1 1/2
15000 Llandegla, t, c, t, Helston	1 0	0	1 1/2
10000 Llandegla, t, c, t, Helston	1 0	0	1 1/2
5120 Lovell, t, c, t, Wendron	0 18	0	1 1/2
9000 Marke Valley, c, t, Llanidloes	6 8	6	1 1/2
6000 Medlyn Moor, t, c, t, Wendron	3 15	10	0
23000 Mid-Devon, t, c, t, (17000, 3s. 4d. pd.)	0 8	6	0
20000 Mona Consols, t, c, t, Anglesea	1 0	0	1 1/2
15000 Monkstoun, t, c, t, Devon	2 0	0	2 1/2
20000 Mostyn Consols, t, c, t, Flint	1 0	0	0
10000 Mynydd Gwddu, t, c, t, Cardigan	4 0	0	3 1/2
12000 Morfa Du, t, c, t, Anglesea	1 0	0	3 1/2
9000 Mounts Bay, t, c, t, Breage	0 10	0	3 1/2
6144 Mount Carbis, t, c, t, Redruth	0 10	0	3 1/2
2400 New Cook's Kitchen, t, c, t, Illogan	8 1	0	5 1/2
8000 New Dolcoath, t, c, t, Camborne	3 0	0	0
10000 New Holmbush, t, c, t, Callington	2 0	0	0
6000 New Kiddy, t, c, t, St. Agnes	0 10	0	2 1/2
12000 New Penrose, t, c, t, Helston	1 0	0	1 1/2
3500 New Tincroft, t, c, t, Lelant	6 0	0	3 1/2
2000 New Trumpet, t, c, t, Wendron	0 10	0	1 1/2
12000 New West Caradoc, t, c, t, Liskeard	0 10	0	3 1/2
3000 New Wheal Pevor, t, c, t, Redruth	0 10	0	2 1/2
35000 New Wye Valley, t, c, t, Montgomery	1 0	0	1 1/2

NON-DIVIDEND MINES—continued.

Shares.	Divid.	Last wk.	Clos. pr.
20000 North Alfred, c, Phillack	0 10	0	1 1/2
5328 North Busy, t, c, Blackwater	0 15	8	1 1/2
10000 N. D'Eresby Mount, t, c, t, Carnarv.	1 0	0	1 1/2
12500 North Goginan, t, c, t, Cardigan	1 0	0	1 1/2
20000 North Herodotus, t, c, t, Liskeard	0 8	6	3 1/2
7500 North Molton, t, c, t, Devon	1 0	0	0
6000 North Penstruthal, t, c, t, Gwynedd	1 14	0	1
2338 North Trekerby, t, c, t, St. Agnes	8 17	10	1 1/2
8000 Northern, t, c, t, Durham	1 0	0	1 1/2
4000 Okel Tor, t, c, t, c, Calstock	1 0	0	1 1/2
8000 Old Shepherds, t, c, t, Cornwall	0 10	0	1 1/2
12000 Pandora, t, c, t, Carnarvon	2 0	0	3 1/2
11612 Pant-y-Mwyn, t, c, t, Mold	2 0	0	2 1/2
45000 Parys Corporation, t, c, t, Anglesea	1 0	0	3 1/2
7500 Pateley Bridge, t, c, t, Yorkshire	1 0	0	0
6000 Peden-an-dre, t, c, t, Redruth	2 7	0	4 1/2
12000 Pelyn Wood, c, t, Llanidloes	0 5	0	3 1/2
600 Pendarves United, c, t, Camborne	1 0	0	2 1/2
30000 Penhale and Barton, t, c, t, St. Columb	1 0	0	1 1/2
12000 Pen-y-Orsedd, t, c, t, Flintshire	1 0	0	1 1/2
15000 Perran Consols, t, c, t, s.t.	1 0	0	1 1/2
10000 Pioneer, t, c, t, Wales	1 0	0	1 1/2
10000 Port Rose, t, c, t, Cornwall	0 13	6	3 1/2
10000 Port Nigel, t, c, t, Carnarvonshire	2 0	0	2 1/2
6000 Prince Royal, t, c, t, St. Agnes	1 0	0	1 1/2
12000 Prince of Wales, c, t, c, Calstock	0 11	6	3 1/2
15000 Royalton, t, c, t, St. Columb	1 0	0	1 1/2
38000 Russell United, t, c, t, Tavistock	1 0	0	1 1/2
30000 Silver Hill, t, c, t, Callington	0 10	0	3 1/2
4000 Sortridge, t, c, t, Horrabridge	1 0	0	1 1/2
6000 South Orbis, t, c, t, Redruth	0 10	0	3 1/2
8500 So. Devon Unit, t, c, t, Buckfastleigh	1 0	0	1 1/2
5000 South Dalcouth, t, c, t, Carnarvon	0 12	0	3 1/2
6000 South Penstruthal, t, c, t, Gwynedd	1 12	0	3 1/2
6000 South Tolarne, t, c, t, Camborne	1 4	0	3 1/2
40000 South Wheel Croft, t, c, t, Tavistock	1 0	0	2 1/2
2043 South Wheel Croft, c, t, Illogan	13 14	6	11 1/2
4000 Tamar, t, c, t, Bearlston	1 0	0	1 1/2
10000 Tankerville Gt. Consols, t, c, t, Salop	0 10	0	1 1/2
6400 Teesdale, t, c, t, Durham (pref.)	1 6	0	3 1/2
20000 Tin Hill, t, c, t, St. Stephens	1 0	0	1 1/2
10000 Tivoli, t, c, t, Carnarvon	0 0	0	0
12000 Trevince Consols, t, c, t, Gwynapp	0 5	0	1 1/2
6000 Trugo, c, t, St. Columb	0 5	0	1 1/2
10000 Tyn-y-Fron, t, c, t, Cardigan	1 0	0	1 1/2
10000 Un. Van & Glyn, t, c, t, (t, 7500 pref. sh)	1 0	0	3 1/2
1000 Vaughan, t, c, t, Cardigan	0 10	0	3 1/2
18000 Victor, t, c, t, Cilcen, Flintshire	0 14	0	3 1/2
15000 Vincent, t, c, t, Altarnun	1 0	0	1 1/2
20000 Walkham United, t, c, t, c, Tavistock	1 0	0	1 1/2
12000 West Devon, t, c, t, Carnarvon	1 0	0	1 1/2
12000 West Cadnor, t, c, t, Cleve	6 9	3	14 1/2
3000 West Craven Moor, t, c, t, Pateley Bridge	1 0	0	1 1/2
12000 West Crebor, c, t, Tavistock	0 5	0	1 1/2
10240 West Devon Consols, c, t, Calstock	1 0	0	1 1/2
10000 West Godolphin, t, c, t, Breage	0 15	0	2 1/2
6000 West Kitty, t, c, t, St. Agnes	0 12	0	9 1/2
20000 W. Lisburne, t, c, t, (t, 14 sh.) Cardigan	1 0	0	1 1/2
3000 West Mary Ann, t, c, t, Menheniot	1 13	0	1 1/2
20000 W. Pateley Bridge, t, c, t, Yorkshire	1 0	0	1 1/2
12000 West Pileolus, t, c, t, Liskeard	0 2	0	1 1/2
6000 West Polbreen, t, c, t, c, St. Agnes	0 2	0	1 1/2
5190 West Poldice, t, c, t, St. Day	6 0	0	13 1/2
10000 West Vor, t, c, t, Helston	2 0	0	2 1/2
2048 West Wheel Frances, t, c, t, Illogan	30 13	3	20 1/2
3000 West Wheel Peevor, t, c, t, Redruth	3 0	6	14 1/2
12000 West Wye Valley, t, c, t, Montgomery	3 0	0	0
6000 Wheel Agar, c, t, Illogan	14 6	0	15 1/2
6144 Wheel Basset, c, t, Illogan	6 1	0	6 1/2
12000 Wheel Breda, t, c, t, Breage	0 16	0	2 1/2
12000 Wheel Coates United, t, c, t, St. Agnes	17 6	1	13 1/2
2585 W. Comf., & No. Tres., t, c, t, Gwynapp	0 2	0	2 1/2
50000 Wheel Elizabeth, t, c, t, Cornwall	1 0	0	3 1/2
5000 W. Fortune, t, c, s, s, Harrowbarrow	1 0	0	3 1/2
15000 Wheel George, t, c, t, t, Carnarvon	1 0	0	3 1/2
12288 Wheel Jane, t, c, t, Kea	1 10	8	11 1/2
12000 Wheel Jewell, c, t, St. Hilary	0 16	6	3 1/2
25000 Wh. Hoo and Trevelyan, t, c, t, Lisk.	12 0	0	3 1/2
20000 Wheel Lows, t, c, t, Callington	0 1	3	3 1/2
2000 Wheel Lows, t, c, t, St. Just	0 1	3	3 1/2
6000 Wh. Prussia, & Cadrew, t, c, t, Rarth	2 0	0	1 1/2
6000 Wheel Sisters, t, c, t, Lelant	3 10	0	2 1/2
4096 Wheel Uny, t, c, t, Redruth	15 16	0	3 1/2
4000 Ystwith, t, c, t, Cardigan	1 0	0	1 1/2

bt, blende; c, copper; g, gold; l, lead; s, silver; sl, slate; sl, silver-lead; t, tin; z, zinc; t, iron; a, anthracite.

* Limited Liability Companies; † quoted on the Stock Exchange.

‡ have paid dividends.